The Ethnobotany of the Kwanyama Ovambos

Women making marula wine.

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The Ethnobotany of the Kwanyama Ovambos

Robert J. Rodin

1985

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MONOGRAPHS IN SYSTEMATIC BOTANY
from the Missouri Botanical Garden

Volume 9

ISSN 06161-1542

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Printed in the United States of America by
Allen Press, Inc., Lawrence, Kansas.

Contents

List of Illustrations vi
Preface 1

1. Introduction to the Kwanyama Ovambos 3
The Physical Environment 3
Origin of the Kwanyamas 5
Early Exploration 7
Linguistic Information on the Kwanyama Language 7
The Kraal 8
Hut Construction 11
Kraal Ownership and Inheritance 13

2. The Place of Men and Women in Kwanyama Society 14
The Significance of Plant Materials in Rites and Ceremonies 20
The Sense of Community 21

3. Plants in the Kwanyama Culture 23
Carved Wood 23
Weapons 29
Fuel and Fires 33
Gathering of Foods 33
Cultivated Plants 34
Wild Plants 34
Preparation of Food 35
Beverages 36
Poisons 37
Cosmetics 38
Medicines and Magic 38
Narcotics 40
Musical Instruments 41
Dyes 42
Clothing 43

4. Taxonomic Arrangement of Plants and Their Uses 44
Nonvascular Plants 44
Vascular Plants 44

Acanthaceae 44
Aïzoaceae 46
Amaranthaceae 46
Amaryllidaceae 48
Anacardiaceae 48
Apocynaceae 49
Aponogetonaceae 50
Araceae 50
Asclepiadaceae 50
Bignoniaceae 52
Blechnaceae 52
Bombacaceae 52
Boraginaceae 53
Burseraceae 54
Cactaceae 55
Campanulaceae 56
Capparidaceae 56
Caryophyllaceae 57
Celastraceae 57
Chenopodiaceae 57
Combretaceae 58
Commelinaceae 61
Compositae 61
Convolvulaceae 65
Crassulaceae 67
Cucurbitaceae 67
Cyperaceae 70
Dioscoreaceae 72
Ebenaceae 72
Elatinaceae 74
Euphorbiaceae 74
Gentianaceae 78
Gramineae 78
Hydrocharitaceae 86

Hydrostachyaceae 86
Iridaceae 86
Isoëtaceae 87
Labiatae 87
Leguminosae 88
Liliaceae 106
Logianaceae 109
Loranthaceae 110
Malvaceae 110
Melastomaceae 112
Meliaceae 112
Menispermaceae 113
Molluginaceae 114
Moraceae 115
Myrtaceae 116
Nymphaceae 116
Ochnaceae 116
Olacaceae 117
Oleaceae 118
Onagraceae 118
Palmae 118
Pedaliaceae 121
Polygalaceae 121
Polygonaceae 122
Portulacaceae 122
Plumbaginaceae 123
Rhamnaceae 123
Rubiaceae 125
Rutaceae 126
Salvadoraceae 126
Saxifragaceae 126
Scrophulariaceae 127
Solanaceae 128
Sterculiaceae 130
Tiliaceae 131
Verbenaceae 133
Vitaceae 133
Zygophyllaceae 134

References 134

Appendix: Kwanyama plant uses 136

List of Illustrations

Frontispiece. Women making marula wine. ii
Figure 1. Map of South West Africa and Ovamboland. 4
Figure 2. Aerial view of a kraal. 10
Figure 3. Hut roof construction. 12
Figure 4. Large grain storage baskets used for storage of millet and Kaffir corn. 15
Figure 5. Twined fishing trap. 16
Figure 6. Ovambo hoe. 24
Figure 7. Carved wooden beer mugs with burned designs. 24
Figure 8. Craftsman burning designs on beer mug. 25
Figure 9. Kwanyama dolls. 26
Figure 10. Carved wooden spoons. 27
Figure 11. Women pounding grain with mortar and pestle. 28
Figure 12. Gourds. 29
Figure 13. Kwanyama weapons. 31
Figure 14. *Sanza* or Ovambo piano. 33
Figure 15. *Omavanda* or dried potherbs. 35
Figure 16. The *okanbulumbumbua,* a one-stringed musical instrument. 41
Figure 17. Traditional Kwanyama bride's costume. 42
Figure 18. Modern style hats woven from palm leaves. 43
Figure 19. Carved wooden milk pail. 55
Figure 20. The author's chief informant (Roland Kalitu) interviewing a woman carrying palm leaves. 119
Figure 21. Coiled Kwanyama baskets. 120

Preface

This ethnobotanical study is the result of two visits to Ovamboland to study the Kwanyama, one of the segregated tribes of the Ovambos of Bantu linguistic affiliation. My first visit in 1947 was as a graduate student, serving as Botanist for the University of California African Expedition. The goal was to collect herbarium specimens and living material to start an African section in the University Botanical Garden in Berkeley, California. Dr. Edwin M. Loeb, of the Anthropology Department, University of California, Berkeley, assisted by his wife, Ella-Marie Loeb, was making ethnological studies of the Kwanyama that year, and he asked me to assist for a month or so in the collecting of specimens and data on plants used for "magic." Loeb's camp was at Oshikango on the northern boundary of Ovamboland and consisted of only a few thatched native huts constructed for use of the Native Commissioner and the expedition, with an open well nearby. Besides the 30 to 40 plants collected for Dr. Loeb's project, more than 100 additional species were collected with ethnobotanical data. My visit was in November and part of December at the end of the dry season, a circumstance that limited collecting largely to woody plants, mostly fruiting. Realizing there was great potential for further collecting and that my data were very incomplete, I had a strong desire to return to make more complete collections.

Just 26 years later, in 1973, I was afforded that opportunity when I was granted a sabbatical leave from California Polytechnic State University, San Luis Obispo. At the same time I was awarded generous support with a faculty research grant from the National Geographic Society for travel and field expenses (Rodin, 1981). See Loeb (1950b) for a general introduction to the Kwanyama.

As on the first expedition, we camped at Oshikango within sight of the Angolan border. On the first trip there had been no roads, only "tracks" north of Fort Namutoni, which served as the Customs Office for South West Africa. Now a modern highway goes to the border and connects with paved roads in Angola. Only the last 40 miles in Ovamboland is unpaved. The Customs Office is now located at Oshikango, and there are a couple of houses there for the Customs Officer and his staff. The officer in charge kindly let us use a prefabricated house, which gave us a great deal of protection in the rainy season. We were in southern Africa about four months, staying in Ovamboland through the rainy season when annuals and many perennial plants were flowering and fruiting, a season when most scientists had not been in residence because of the isolation by floods and lack of medical care in a malarial zone.

Acknowledgments.—We had excellent coöperation from the Kwanyama people through my chief informant, Mr. Roland Kalitu. All the Kwanyama names were later checked in Windhoek by two linguists: Mr. W. Zimmerman, in the National Language Bureau, Department of Education, was most helpful because the Kwanyama language is undergoing some changes. See section on linguistics. Mr. Gabriel Taapopi, from the Kwanyama tribe, who is employed in the same department, gave great assistance in linguistic problems and was well informed about plant names.

Dr. N. J. van Warmelo, retiring Chief Ethnologist of the Bantu Administration, Pretoria, an anthropologist whom I had met on the first expedition, had encouraged me to return to complete this study. I am most grateful for his assistance in obtaining necessary permits to enter Ovamboland, where few outsiders, even from South Africa, are permitted. Dr. Johan S. Malan, ethnologist, the State Museum, Windhoek, was of great assistance, both in making our plans and helping with the project in the field. In 1973 we were most fortunate to be able to take a trip into Angola for a few days, where we had the opportunity to consult with the late Fr. Carlos Estermann, who spent over 50 years in that country, most of the time among Ovambos in Angola where thousands of Kwanyamans reside. Fr. Estermann is the leading living authority on the Ovambos today. The Commissioner General for Ovamboland, Mr. J. M. de Wet, in Oshakati, Ovamboland, welcomed us and gave us complete freedom to proceed with our research. The late Dr. Johann Guildenhuys, Chief Medical Officer for Ovamboland, located at the Government Hospital in Oshakati, was greatly interested in our project, because he wanted more information about the use of plants in the diet and causes of poisoning, especially those plants used as medicines and enemas, which appeared to be causing deaths among children. He had strongly

urged the Ovambo Legislative Council, composed of headmen, to grant permission for our project.

Many Africans assisted with information of whom only a few can be named here, including: Rev. Nathaniel Paulus, an ordained Dutch Reformed Church pastor, a learned man, and his wife, Kathrinah. Before her marriage, Mrs. Paulus had been employed by Mrs. Loeb to assist in camp on the first expedition. Rev. Paulus's brother, Mr. Phillipus Paulus, now employed in the Customs Office, Oshikango, contributed from his knowledge of plant uses. At Odibo in St. Mary's Mission (Anglican) the Canon Gabriel Nameuja, retired, has more knowledge of the older traditions, especially for magic and medicinal uses of plants, than any other Ovambo I met. He served as one of Dr. Loeb's informants 26 years earlier. Since we were staying in the district of Headman Gabriel Katamba, we met him, exchanged gifts, and were welcomed to work in his district. A special word of appreciation should be given to Lieutenant J. J. J. Liebenberg, the officer in charge of the Customs Office at Oshikango, and his wife and staff, who did many acts of kindness to make our stay at the isolated Oshikango as comfortable as possible under field conditions.

I am most appreciative of the assistance given by professional botanists in government service in southern Africa during both trips. Miss I. C. Verdoorn of the National Herbarium, Botanical Research Institute, Pretoria, identified many of my herbarium collections in 1947. The remainder from that trip were identified by the late Mrs. L. Bolus, Curator of the Bolus Herbarium, University of Cape Town, where specimens she identified were deposited. Most specimens of our recent expedition were identified by Mr. Wilhelm Giess, Curator of the S.W.A. Herbarium, Windhoek, with verifications by Dr. Prof. Herman Merxmüller, of the Botanische Staatssammlung, Munich, Germany. The remainder were identified by the staff of the National Herbarium, Botanical Research Institute, Pretoria, under the direction of Dr. L. E. Codd.

Dr. Robert L. Hoover, anthropologist at my own university, kindly read the manuscript and made helpful suggestions. I greatly appreciate the editorial work of Dr. Brent Berlin and comments on the introductory parts by Dr. Elizabeth Colson, both from the University of California, Berkeley. Dr. Lincoln Constance, University of California, Berkeley, painstakingly reviewed the manuscript. The book would not have come to completion without the encouragement and assistance of my wife, Elva, who also served very effectively as Technical Assistant in South West Africa on the second expedition. She supervised camp and typed letters and over 3,200 labels for over 400 herbarium numbers and duplicates collected. Labels included scientific and Kwanyama names, essential morphological data, and uses by the Africans. The final typing of the manuscript was by our very dear friend, Mrs. Thelma Fiorini of Turlock, California.

Herbarium specimens were distributed with: S.W.A. Herbarium, Windhoek (WIND); Bolus Herbarium, University of Cape Town (BOL); British Museum (Natural History) (BM); Field Museum of Natural History, Chicago (F); United States National Herbarium, Smithsonian Institution (US); National Herbarium, Botanical Research Institute, Pretoria (PRE); Botanische Staatssammlung, Munich, Germany (M); Royal Botanic Gardens, Kew (K); Missouri Botanical Garden (MO); University of California, Berkeley (UC); Robert F. Hoover Herbarium, California Polytechnic State University, San Luis Obispo (OBI); and a partial set to the Economic Herbarium of Oakes Ames, Botanical Museum of Harvard University (ECON).

A wide range of references was consulted for both correct botanical names and in writing the enclosed descriptions, a process that is sometimes difficult from field notes and incomplete herbarium specimens. Merxmüller's recently completed *Flora of South West Africa* (1966–72) was the authority for most names used. Other books consulted included Dalziel (1937), Excell and Wild (1960–63), Hutchinson (1946), Hutchinson and Dalziel (1954–58), LeRoux (1971), Phillips (1951), Smith (1966), Story (1958), and White (1962). I must assume responsibility for any errors in scientific, common or native names.

This is an attempt not only to gather the native names and uses, with linguistic data which is pertinent, but to cite herbarium vouchers, now widely distributed, with their scientific names, a practice only infrequently followed by anthropologists. It is hoped this pattern will be followed by others.

Elva B. Rodin expresses her deep appreciation to the staff of the Missouri Botanical Garden for its painstaking handling of the material.

Robert J. Rodin

1. Introduction to the Kwanyama Ovambos

The Physical Environment

Ovamboland (Owambo) lies at the northern edge of South West Africa (Namibia), on a broad, nearly flat, sandy plain. The sand is particularly significant, because it is fertile as the result of frequent flooding and is easily cultivated. There are no stones or rocks within its territory. However, among Ovambos in Angola there is a site known as the place of the stone, its location now unknown, where they stayed during their early migration. Many returned later to that one stone to sharpen axes, hoes, knives, and spears.

There are no permanent rivers within Ovamboland, but there are shallow channels, called *oshanas,* through which water drains from the land during the rainy season, down to Etosha Pan (Fig. 1). Often the Kunene River to the north overflows, and its water also drains down through the *oshanas*. In addition to the silt which keeps the land fertile the Kunene brings millions of fish which are trapped by the Ovambos for food.

The best description of the fish (*eeshi*) is by Lebzelter (1934): "The best fish in Amboland is a large lung fish (*eeshi*). The next best is a whitefish (*amakendi*). There are two other fish, less prized: one has spines on its back, is black and very bony, and is called *onimu*; the other, similar, but light in color, is called *nikongo ka jepua.* There is also a variety of rock fish, a small fish with a small mouth, called *ombusisi.*" I observed two common species: a very abundant small silvery fish about 13 cm long, called "sardines" by my informants, and a species of catfish up to 30 cm long, often a pink color and not nearly so common. These were once caught in small woven baskets made of plant stems, but now nylon fish nets are more common. As the waters recede attractive water lilies, amaryllises, and other aquatic plants flower in the *oshanas*. Grass grows in them as they dry up, forming important fodder for livestock after many of the other grasses have been consumed.

One may grasp some idea of the size of South West Africa (Fig. 1) when it is realized that, with its area of 518,000 square miles, its western boundary along the Atlantic Ocean is 900 miles long, and its average width is better than 350 miles. The southern part of South West Africa is nearly barren desert; the Namib Desert forms a sparsely vegetated narrow strip bordering the Atlantic coast the whole length of the country. In the central region one sees some mountainous areas with desert shrubs, thorn trees and desert trees with small or deciduous leaves, and some good grasslands, where there is sufficient rain. Some areas have low succulent vegetation. Plant life becomes more luxuriant as one goes farther north. Only in Ovamboland and the Okavango to the east is there sufficient rainfall so that crops can be grown without irrigation, and even there occasionally droughts have been disastrous.

Ovamboland comprises an area of about 16,200 square miles, lying on a plateau at an elevation averaging 3,300 feet above sea level. Approximately 2,500 square miles are occupied by the Kwanyama people. Ovamboland runs approximately 95 miles north and south by 210 miles east and west. The seven Ovambo tribes total more than 375,000 persons, representing about one-half the total population of whites, coloreds, and natives in South West Africa. The Kwanyama people number over 87,000 in Ovamboland, but perhaps as many as 200,000 live north in Angola, separated by an artificial political boundary.

From my few visits and brief contacts in Angola it appears the Kwanyama people live more primitively, and have had very little assistance from the Angolan government (before independence) for medical care, education, and transportation. Perhaps they still use many of the older customs, including uses of plants.

All of Ovamboland is well within the tropics and being located on a plateau does not experience the severe heat found at sea level. Maximum temperatures in their hot season, just preceding the rainy season, vary from 90–105°F (32.2–40.6°C); the minimum temperatures at that season and during the rainy season vary from 70–80°F (21.1–27.8°C) or occasionally 85°F (29.4°C) at night. Temperatures in the cool season range between the low of 35°F (1.7°C) and 70°F (21.1°C) in the days. There are no frosts.

The rainfall at Oshikango averages 20 inches (520 mm) per year, but the annual and seasonal distribution over the years is variable. Scattered showers usually start in October or November, with heavier rains falling in December through March. In those years in which the rain is only 15 or 16 inches (380–400 mm), as it was in 1958

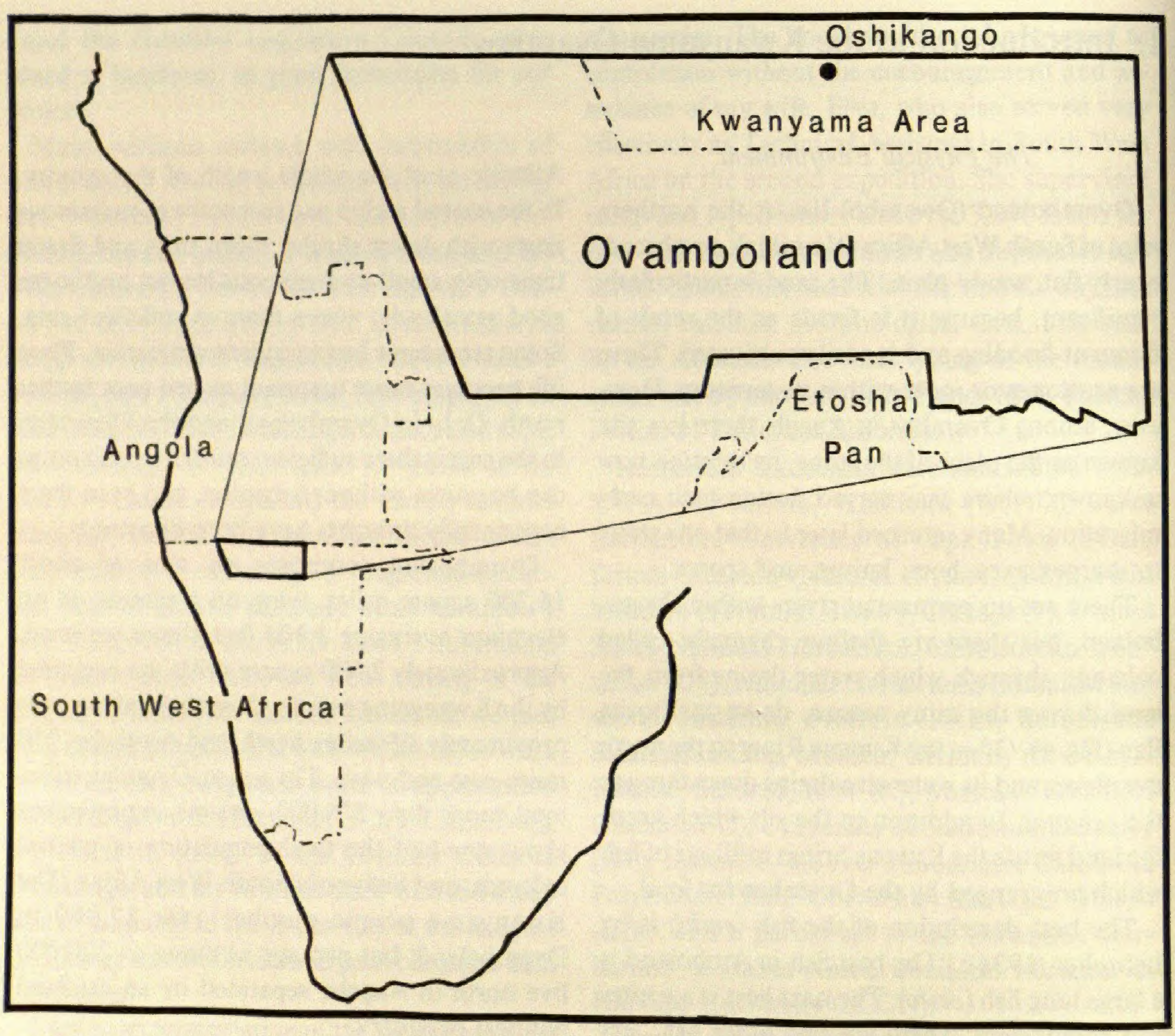

FIGURE 1. Map of South West Africa (Namibia) and Ovamboland (Ovambo).

and 1959 (Bruwer, 1961), there is insufficient water for crops to mature. In some years, such as during our time in the field in 1973, there was a severe drought in January and February, so that young millet and sorghum plants less than 1 foot (30 cm) high were wilting, browning and seemingly nearly dead. When normal rains resumed within a few weeks, the millet and sorghum miraculously grew to normal heights of 6 to 8 feet (2–2.7 m) to produce a good crop of grain, along with Ovambo beans (blackeye peas), watermelons, groundnuts, gourds, and other crops.

The water table in the more densely populated areas of Ovamboland is quite close to the surface, so that Africans rarely have to dig deeper than 20 feet, or sometimes as little as 10 feet, to reach surface water for household and livestock use. Because of the sandy soils, the unlined wells are not cylindrical but conical. As one goes farther away from the *oshanas* there are higher areas on the plateau that have a lower water table. The South African government has constructed a series of bore holes and windmills with suitable storage tanks and water troughs for livestock at scattered locations. In other government projects to conserve water for livestock and household use, small dams have been built and the soil behind them scooped out along the *oshanas* to provide small storage reservoirs of water. Although these ponds do not persist all year, they retain water for several months longer than in previous times. A major canal has been built in Ovamboland from the Ruacana Falls on the Kunene River to provide irrigation for Ovambo tribes other than Kwanyamas, and especially to supply water to the new administrative headquarters at Oshakati community, where a large reservoir has been constructed together with a modern water-purification plant. The Okatana Canal, as it is called (Anonymous, 1971), has gradually been extended to Ondongwa. A small reservoir, a well, and water-purification plant have also been constructed at Oshikango for the

European and African population in that area. It is filled with water during the rainy season. The supply is inadequate during long dry periods, and plans are being made to pump water from Ondongwa to Oshikango, a distance of about 60 km. In some wells the water is slightly brackish.

Although the surface soil is all sandy, it is underlain by salty soils, and in some places by alkaline clays. These latter have been utilized for road building throughout Ovamboland in recent years. The alkalinity and salt are evidence that before the Okavango River drained into the Okavango swamps, it had drained into a broad, shallow basin which had no outlet to the sea. Salts gradually accumulated, and the basin extended from Etosha Pan as far north as Oshikango. The central or deepest part of the basin was Etosha Pan, which today accumulates water during the rainy seasons but dries up during the remainder of the year. The *oshanas* drain into it today. Fortunately, normal rainfall in Ovamboland keeps the alkalinity deep enough so that it does not affect agriculture except in a few places where it surfaces.

Rainfall and soil types influence the type of vegetation, but man has also had a selective influence, protecting tree species which are important in construction of huts, tools, etc., and fruit-bearing trees. The farther south or west one goes the more one encounters decreasing annual precipitation that is related to occurrence of specific vegetation types. From the grasslands in Etosha Pan and the sclerophyllous shrubs and trees on adjacent sandy hillocks, one meets several notable vegetation types as one goes northward into Ovamboland.

In the Ondongwa area 25 years ago there were many more *omufiati* (*Colophospermum mopane*), *Combretum* spp., and *omboo* (*Commiphora africana* and other spp.), but the overabundant goats and native demands for wood for construction, fires, etc. have depleted some of the natural species. The fan palm, *Hyphaene ventricosa*, which is preserved by law, is still common in the area. It has a scattered distribution from the Ondongwa area northward into Angola and westward along the Kunene River. In many areas one may observe mopane scrub (*Colophospermum mopane*) as a dominant in the vegetation. In other areas, especially in the south, but continuing in some localized areas to the Angola border, there is thorn scrub in which different species of *Acacia* dominate, but in which other Leguminosae, Rhamnaceae, and shrubs of other families are common. In a few places spineless trees up to 25 feet high, such as *Combretum sericea* and *Terminalia* spp., may be the dominant vegetation. The mopane, *Combretum*, and other trees which are important in construction are protected by the Ovambos. Only near the northern border does one see a few very large tropical forest trees, some of which are important fruit trees and hence preserved. Others furnish lumber and construction materials for the kraals. The larger fruit trees include marula, *Sclerocarya caffra* (*omuongo*); manketti nut, *Ricinodendron rautanenii* (*omunghete*); bird plum, *Berchemia discolor* (*omuve*); wild fig, *Ficus sycomorus* (*omukuyu*); and wild persimmon, *Diospyros mespiliformis* (*omwandi*). Large trees especially useful for lumber include a mahogany, *Entandrophragma spicatum* (*omutaku*); African teak, *Pterocarpus angolensis* (*omuva*); Rhodesian teak, *Guibourtia coleosperma* (*omusii*), and others.

Origin of the Kwanyamas

The early history of the Kwanyamas is obscure, especially their migrations before arrival in Ovamboland, and some variance is found in accounts from different informants and texts.

Their legends say that their people came from a large lake in East Central Africa. Although tradition has no name for the lake, it is assumed by some to be Lake Nyasa or perhaps a lake farther north. Their migration route was through Central Africa via the Zambesi River, westward to the Okovango River and eventually to the Kunene River in Angola, and thence southward to the present location.

One clan, the EkuannaXungi [they who converse by night], was responsible for keeping the tribal history and tradition. This is no longer an active clan, and no one else has assumed the responsibility. Some doubt has been expressed as to the accuracy of oral traditions over periods of centuries. In Ghana and other West African nations such clans are still active today. Our knowledge of the Kwanyamas was kept largely by their clans which are the chief source of information recorded. A few interpretations of these events will be discussed here, with the related legends.

Hahn (1928) believed that the Ovambos and Hereros remained as a single tribe until they reached approximately the site of modern Ondongwa. Nangombe was the leader who had led them from the east. At Ondongwa the group di-

vided, Nangombe settling in the fertile Ovamboland area with his followers, to become the Ovambos. His younger brother, Kathu, moved onward in search of pastures and became founder of the Hereros, who did not settle down and establish gardens, but continually migrated to find food for their herds in the poorer lands to the south and west. Bruwer (1961) points out that the Ovambos appear to be more diverse physically and culturally than this legend would explain.

Although Tönjes, a German missionary, wrote the earliest account of the tribal traditions of the Kwanyamas (Tönjes, 1911) a very complete manuscript by Sckär (1916) was translated from German into English and included by Loeb (1962) as an appendix to his book. One of the most reliable accounts, in the opinion of Bruwer (1961), is that of Vedder (1938).

According to legends reported by these authors, in the beginning there was a man, his wife, and four children—three boys and one girl (Sckär, 1916). *Kalunga*, their god, gave them the sacred fire, the sacred water, cattle, and sheep. For a long time these people lived in the region of the Great Lakes of Central Africa. Unknown circumstances caused them to move away, and they travelled westward for a long time until they came to the Okavango River, which at that time ran into Etosha Pan. They lived along the river in what is today the southern part of Angola.

Through the years they had increased greatly in numbers. Because of friction, according to Sckär, at several times there were divisions of the people. In a place called Hakafia the people divided once again, and one branch travelled in a westerly direction under the leadership of a chief, Kambungu, in the time when Sitehnu was king. Kambungu belonged to the Ovakuanangobe [the cattle people] clan. Two other clans joined him, the Ovakuahongo [the wood carvers] and the Ovakuanavala [the zebra clan]. They wandered as far west as the Kunene River, which was not inhabited, but did not stay there long. Eventually in their wanderings they returned southeastward to the approximate position they occupy in Angola and South West Africa today. Vedder (1938) places their entrance into South West Africa at about 1550 A.D., somewhat after the arrival of the first European explorers and settlers in the Cape Region of South Africa, and considerably after the Portuguese settlement in Angola. It is unfortunate that no archeological work has been done in South West Africa compared with that in East and Southeast Africa recorded by Fagan (1965) or in Shinnie (1971). They show a somewhat earlier date for Bantu migrations into southern Africa through Zimbabwe and the Transvaal.

The Ovakuanangobe and associated clans had migrated without their cattle; once settled, they returned to the main group to fetch their cattle. There was disagreement about how many cattle belonged to them, but since they were a big and powerful group, they obtained their share. After that the other chiefs called them the Ovakwanyama, or "meat devourers," and they are known today as the Kwanyama tribe.

There were five other chiefs of the family of King Sitehnu. One of these was Kahnene, who is designated in another legend by Sckär as the chief who became the leader of the Kwanyama people (Loeb, 1962: 367). Vedder (1938) gives King Sitehnu as the first of approximately 20 Kwanyama kings for whom we have records from about 1550 to 1850 A.D. He also states that it was King Sitehnu who led the group to the Kunene River and back into the present location. This appears to be the more accurate account.

The other chiefs under King Sitehnu, his sons, eventually became leaders of groups that resulted in other divisions or subtribes of the Ovambos. One son, Hamangudu, continued westward into the Koakoveld with his followers. They became known as the Ovasimba [needy-people], known today as Ovahimba or Himba. Today they are more closely related to the Hereros linguistically and in other cultural aspects, than to the Ovambos (Malan, 1973, 1974).

Of the population which migrated from the north, two major linguistic groups have resulted. The Hereros scattered for the most part into the drier areas of South West Africa. They have become wandering herdsmen and usually do not plant crops but depend mostly upon sheep, goats, and cattle for food. The other linguistic group is the Ovambos, also referred to as the Ambos. The Ovambos have a mixed cattle-hoe culture and depend heavily on growing crops for their staple foods. Cattle are killed only for special feasts and are wealth symbols. In southern Angola, the Hila and other tribes speak languages that belong to this same family of languages. Although today there are seven linguistic groups among the Ovambos, the two dominant languages are those spoken by the Ondongas in the south and the Kwanyamas in the north, including a large population of the latter in Angola.

Both the Herero and Ovambo faces have features such as narrow noses and moderately thin lips. The hair color and texture and skin color are Negroid, but the skin is considerably lighter than that of some African Negroid people.

Loeb (1956, 1962) assumed that an early Mediterranean influence is strongly indicated among the Ovambos, although that theory is not popular with anthropologists today. Loeb assumed that specific aspects of Mediterranean culture could be observed in societies down through Central or East Africa, especially Zambia and Zimbabwe, that demonstrated the route followed, and that some features such as the stone kraals of Zimbabwe give archeological evidence to the credibility of his ideas. These features included kraal design, planting culture, the divine kingship, sacred cattle, vestal virgins, antiphonal love songs (Loeb, 1950a), and bundling. Lebzelter (1934, Vol. 2), Adametz (1920), and Irle (1906) thought that the longhorned cattle which the Ovambos and Hereros originally possessed were evidence of a Mediterranean influence because this was a breed similar to that known from a much earlier period in Egypt.

Early Exploration

The first Europeans to explore Ovamboland were Galson and Andersson, who started from Walfish Bay in 1850, first going to the Erongo Mountains in South West Africa then toward Ovamboland. Their goal was Lake Ngami, further east. Near the present city of Tsumeb they met a party of Ovambos who had gone south to carry on trading and who agreed to guide them to Ovamboland. In 1851 they arrived in Ovamboland and after some delay saw Chief Nangoro. He allowed them to trade for food but did not permit them to go the four day's oxcart journey to see the Kunene River nor to continue to Lake Ngami. They observed the richest agricultural land in South West Africa with its abundant crops of millet, sorghum, melons, etc., and the herds of cattle and goats. They kept records of the culture of the tribe, the geography of the country, and other information which was included in Andersson's books (1856, 1875), the earliest detailed accounts of the area.

Several missions began work in South West Africa in the late 1800s, including the London Missionary Society (Anglican) and the Rhenish Missionary Society (Lutheran) from Germany. Their first contacts with the Ovambos were a visit in 1875 by the Germans Hugo Hahn and a fellow missionary Rath, but the Ovambos were belligerent and attempted to kill them when they were leaving. It was not until 1891 that Rev. K. Sckär was invited by Chief Uejulu to start a mission there. Sckär, and other Germans who followed, contributed much to our knowledge of linguistics, ethnology, and botany of the Ovambos. Much of the German work was taken over in World War I by the Finnish Lutherans after the German military forces in South West Africa surrendered to the allied forces. Finnish and Anglican work still continues in the area.

Linguistic Information on the Kwanyama Language

After the Ovambo people settled in approximately their present geographical location, about 1550 A.D., they divided eventually into eight tribes: Kwanyama, Ndonga, Kwambi, Ngandjera, Mbalantu, Kwaluudhi, Nkolokathi, and Eunda. As indicated earlier, the Kwanyama were so named because they were the meat devourers. The Kwambi are those of the place where clay pots are made, and the Ngandjera's name suggests that they were traders of iron products (blacksmiths). The original Bantu language spoken when they arrived became diversified in their isolation, so that today some tribes have great difficulty communicating with others. The two smallest tribes, which together contain less than 3% of the population, with very similar dialects and living adjacent to each other, have now combined into one tribe, the Nkolokathi-Eunda.

According to Bruwer (1966, Tab. 3), the Kwanyama, with a 1960 population of 87,511, is the largest linguistic group. A much larger population, perhaps as many as 200,000 of this particular group, lives north of the political boundary in Angola. Among the Ovambos in Ovamboland the Kwanyama comprise 34.5% of the population, followed by the Ndonga with 28.66%. No other linguistic group has more than 12% of the population.

To be accurate, the people of this study are called the Kwanyama, previously spelled Kuanyama or Kuanjama. Their territory (Loeb, 1962) is known as Ukwanyama and their language as Oshikuanyama. The prefix "ova" means people; thus they are sometimes called Ovakwanyama [the-people-who-eat-meat]. In a similar pattern Ovambo is from the base "ova-ambo" [the-people-with-cattle-outposts].

Early German missionaries made the first attempts to reduce the spoken language of the Kwanyama to written form, both in dictionaries and grammars. The Rev. Hermann Tönjes (1910a) published *Lehrbuch der Ovambo-Sprache (Osikuanjama)* and *Wörterbuch des Osikuanjama Ovambo-Sprache (Oshikuanjama-Deutsch)* (1910b). In 1954 the first English-Kwanyama dictionary, by G. W. R. Tobias, the late Bishop of Damaraland, and B. H. C. Turvey (second edition, 1971) was published. It was largely a translation of Tönjes's earlier work and followed his orthography. Within the past few years the South West African Native Language Bureau in the Department of Education has set up a program to use modern linguistic studies to establish a uniform orthography in all the related Bantu languages in South West Africa. The simplified orthography will make it easier for Africans to read related languages and easier for Europeans who learn more than one Bantu language to use the uniform, phonetically related system. Mr. W. Zimmerman is Chairman of the Kwanyama Language Committee, and he is assisted by a number of linguists. Mr. Gabriel Taapopi, a Kwanyama Ovambo, serves as Secretary of the Committee, working on the preparation of school textbooks for the Kwanyama-speaking schools (Zimmerman, 1966). Both men are also collaborators on the linguistic aspects of this present monograph on plants.

In this monograph we are primarily concerned with the linguistic aspect of plant names, rather than the whole language. Wherever possible, singular and plurals are designated, and a brief square-bracketed translation of the literal meaning from which the name was derived, if known, is included. In the body of the monograph it will be noted that a number of plants, such as some members of the Sedge Family (Cyperaceae), have Kwanyama names but that no uses are known for many of them. We do not know whether all these plants were once utilized, and hence named, or whether they were given names in spite of the fact that they had no known use. Levi-Strauss (1966) has stated that primitives classify plants not just because they are utilized but because they bring conceptual order to their world. I strongly suspect that is true of many of the plants known in this tribe which are not used but which have Kwanyama names. Some plant names have singular and plural forms but only one form is used; such information is cited in the taxonomic section.

The Kwanyama language uses nine classes of nouns plus three locative cases. Prefixes indicate singular or plural forms in each class and are most important because they denote the class, and they often give some idea of the plant form.

Kwanyama is identified as a tonal language, but tonal differences are uncommon and usually omitted in ordinary writing. In scientific works and dictionaries, however, they would be indicated by an acute accent mark (´). Examples would be: *ongóla* (zebra), *ongola* (knee); *omuhúnda* (mountain), *omuhunda* (bag); *ondúdu* (doctor), and *ondudu* (hill).

A few foreign words related to plant names have become incorporated into many languages. These are mostly, but not always, introduced plants, and it is interesting that some introduced plants such as tobacco (*omakaia*), and related snuff (*efenju*), and chili peppers (*ombepela*) show no connection with English, German, or Afrikaans. Examples of words which are related to foreign names include: *omungwaava,* from the English guava (*Psidium guava*); *Santa Maria,* from the Portuguese for *Chenopodium ambrosioïdes*; and *omavinju,* possibly of Portuguese origin, for grape wine, having been derived from "vine" (although no grapes are grown in Ovamboland). Probably dagga or marijuana (*espangue*) was derived from the Hindi, *bhang,* which is used throughout East Africa.

Table 1 shows the classes of nouns, with some indication of singular and plural, and how each class is utilized in the language. Only a few of the classes are used in naming plants; others are utilized for kraal utensils, tools, etc. Table 2 shows the orthographic changes taking place in the Kwanyama language today. Some of the orthographic changes are attempts to eliminate diacritics. The dots over consonants indicated an aspirate in the older system, now represented with three letters. Long lines over vowels indicate a long sound as shown in Table 2. Thus "u" is now "uu" as in *omuuila,* formerly spelled *omūila,* the plant *Grewia deserticola.* Table 2 includes some of the orthographic changes taking place.

The Kraal

Each Ovambo unit family lives within a kraal (Fig. 2), called a *werf* by a few, although this is used exclusively for living quarters of the Herero and has some features distinctive from a kraal. Within the palisaded walls of the kraal are a number of huts. The outer walls and passageways

TABLE 1. Classes of Kwanyama nouns.

Class	Singular Prefix	Plural Prefix	Meaning and Application of Prefixes
1.	omu-	ova-	referring exclusively to people
2.	omu-	omi-	plant names and illnesses
3.	e-	oma-	big things, obvious things, round forms, i.e. sun, hill, etc.
4.	oshi-	oi-	derogative in meaning (non-human)
5.	o/mbe-	ee/mbe-	function or instrumental, names of small plants
6.	o(n)-	ee(n)-	names of animals, plural used for fruits
7.	olu-	omalu-	long thin objects, or journey of long duration
8.	oka-	ou-	diminutive size for all objects (including plants), also collectively for diseases
9.	ou-	omau-	all abstract nouns
10.	oku-	longa-	to work—a gerund, can be used as a noun
11.	pu-		near
12.	lu-		there
13.	mu-		in this place

within are constructed of straight, sharp-pointed poles partly buried in the ground at the base. The upper parts of these poles are tied together with bark of the mopane tree, *Colophospermum mopane* (*omufyati*). The young trees or tree limbs of this species are most desirable, because the wood is termite resistant. Other resistant species considered desirable are *Acacia erubescens* (*okadilangohono*), *Combretum mechowianum* (*omupupuwaheke*), other species of *Combretum*, *Terminalia sericea* (*omulunga*), and *Diospyros lycioïdes* (*osimumu*). Others, which are not termite resistant, are less desirable because they must be replaced every two or three years. The kraal is surrounded by fields the family cultivates for its own food.

Inside the kraal of the polygynous family are many palisaded passages leading to separate compartments for the head of the kraal and for each of his wives. There are usually a separate compartment with several huts for teenage boys and extra huts in the mothers' compartment for

TABLE 2. Orthographic changes in the Kwanyama language.

Old Orthography	New Orthography	Application
ṅ	ngh	as in *omunghama*, formerly *omuṅame*, a tree, *Terminalia prunoïdes*
ṁ	mgh	*omghiku jepungu*, formerly *oṁiku jepungu*, the cob of mealies or corn, *Zea mays*
wu	xu	*omulondaxuxua*, formerly *omulondawuwua*, a species of *Combretum*
ō	oo	*omboo*, formerly *ombō*, several species of *Commiphora*
ā	aa	*omaanda*, formerly *omānda*, a large storage basket for grain
ē	ee	*eembungu*, formerly *ēmbungu*, a grass, *Phragmites mauritianus*
ū	uu	*omuuva*, formerly *omūva*, a tree, *Pterocarpus angolensis*
j	y	*onyati*, formerly *onjati*, a melon, *Momordica balsimina*
hu	xu	*okaxungu*, formerly *okahungu*, an herb, *Euphorbia forskallii*
i	y	*omufyati*, formerly *omufiati*, a tree, *Colophospermum mopane*, and *oilyavala*, formerly *oiliavala*, kaffir corn, *Sorghum caffrorum*
osi	oshi	*oshimumu*, formerly *osimumu*, a tree, *Strychnos cocculoïdes*
ua	wa	*omupwaka*, formerly *omupupuaka*, a tree, *Strychnos pungens*

FIGURE 2. Aerial view taken in 1973 of a kraal for a monogamous family.

older daughters. Also there are special compartments for storage of grain in enormous woven baskets, for the creamery where butter is churned in large calabash gourds, a stamping area for pounding grain in wooden mortar and pestles, a special area for brewing beer, one for cooking, etc. There is one compartment with a hut for overnight guests.

If the head of the kraal is a headman, he has compartments with huts for servants, who are frequently Bushmen. On the outer periphery is a cattle enclosure and a smaller goat enclosure with a fence of cut thorn bushes instead of palisades. Cattle are kept in the larger adjacent enclosure at night and goats in a smaller enclosure, except when boys take the cattle to the east during the dry season in search of fodder at distances so great that they cannot return at night.

The main entrance to the kraal has traditionally faced east. Over this main entrance is a horizontally draped branch of *Leonotis dysophylla* (*etilavalodo*) to keep out evil spirits, including witches. Some plants that also have magic significance are grown inside the kraal. *Tinospora caffra* (*eposa*), which is supposed to repel snakes, is an example. Branches of *Gardenia spatulifolia* (*omulavi*) are put on the roofs of huts as a protection against lightning. The presence of *Acacia giraffae* (*omwonde*) is reported to keep away bees.

Just outside the eastern entrance is a broad flat clearing, the *oluvanda*, more or less separated from the gardens by a fence of cut thorn bushes. The *oluvanda* is a playground for children and adults, the place where ceremonial events are celebrated. It becomes the threshing area during the harvest season. As a convenience, the stamping place where grain is milled, seeds are pounded for oil, and various cosmetics are ground is located somewhere near the *oluvanda*. This stamping place is called the *osini*, the same name given to the wooden mortar and pestle. For details see *Burkea africana* and *Colophospermum mopane*.

One of the most important places in the kraal

is the *olupala,* or meeting place. This circular palisaded area is visible in aerial photographs (Fig. 2) and always has three sitting logs arranged in a U-shape around the fire that may furnish heat or light in the evening. It is here that guests are received and the family often gathers. In larger kraals this compartment may also have a hut with a thatched roof but walls with spaced uprights, a place where guests may be received in the daytime out of the tropical heat or out of rain in the rainy season. At least in a headman's kraal, such huts usually have a circle of low carved wooden stools. Normally the head of the kraal will offer guests some beer, or marula wine in season.

There is in every kraal a second sitting or meeting place, as it is termed by Bruwer (1961). This is not mentioned by Loeb, but it is important. It is the *okalupale komdilo,* the gathering place of the fire. This is less formally organized than the *olupala* and is the intimate gathering place for the family. It is here the family converges as a unit in the evening to converse, drink beer, smoke pipes (both men and women), eat their evening meal, and entertain themselves. Everyone in the family participates without restraint. Although Bruwer (1961) states that this enclosure has its own fireplace, it has more than one.

I visited a typical kraal of a monogamous family about 100 km east of Oshikango, remaining there from afternoon until it was time for all to go to bed, about 9 P.M. As it became dark, in addition to the cooking fire, two or three other fires were lit for light and warmth. There was informal conversation and beer drinking until it was nearly dark. Then the kraal owner's unmarried daughter, about 20 or 22 years of age, cooked a large quantity of millet porridge in an iron pot. I was offered some of the beer as well as some of the porridge. She served her father first, then the informal groups around different fires. Porridge is served on woven palm fiber "plates" made just like coiled baskets, but nearly flat, and food is eaten with two or three fingers. When everyone was seated, the family became more relaxed and jovial. There were two young men guests from another kraal, both about 25, perhaps vying as suitors for the unmarried daughter. My informant gave me a running account of events, which I recorded on my tape recorder. When I asked what they did after supper, he said they told stories and sometimes danced. That is what they did, and they also put on a dramatic production. Dancing, usually by two or three persons, was done to the rhythm of clapping hands. One unusual event occurred later in the evening. The head of the kraal became very angry at the daughter who had cooked the porridge. He had given her permission to visit a relative some distance away for two nights, but she had been gone about four nights. After considerable angry discussion, he extracted a promise that she would not delay her return home in the future. We had asked if my informant could stay in the kraal for the night, and he was permitted to stay in the guest hut while I slept just outside in my Volkswagen camper.

The household of a kraal may be monogamous or polygynous and may contain a few relatives, especially nephews of the husband from his sister's kraal, and servants, either Ovambos or Bushmen. In 1947 most families were polygynous, with a poor man having perhaps two wives, a wealthier man perhaps half a dozen, and a district headman a dozen or more. With more wives the kraal patterns were therefore very complicated. During my visits to over 100 kraals in 1973 I found no polygynous kraals. I had an opportunity to photograph kraals from a helicopter, through the courtesy of a pilot of the South African Defense Force (Fig. 2), which permitted a most revealing survey verified with many photographs. At least 90 to 95% of the kraals appeared to be monogamous with very much simplified interiors without passageways. In front of several huts within the palisade walls, presumably sleeping huts for different members of the family, there are short screens up to eight feet long, which I was told give privacy to people in the huts. Loeb (1962: 128) states that kraals are roughly circular. This is not confirmed by my aerial survey (Fig. 2): today many are rectangular or square in outline. From the air, the well for supplying water for the kraal can always be observed to be a short distance outside the kraal and surrounded by a fence of cut thorn bushes so that animals can never approach or contaminate the well. Water for livestock is carried in buckets to troughs carved from trunks of dead palm trees or other trees.

Hut Construction

Like the walls of the kraal, walls of the huts are vertical poles partly buried in the ground. Again the mopane, *Colophospermum mopane* (*omufyati*), is the most highly desired. The poles are placed very close to each other in a circle

FIGURE 3. Hut roof construction; both frame and bark twine are made from *Colophospermum mopane*.—A. General view.—B. Detail of attaching cross-members with twine.

except for the space left for the doorway. These poles usually rise about 5 feet above ground when in place. In 1947 I observed a few huts with very low doorways—3 or 3½ feet of clearance—so that it was necessary to crawl in. The roof is not made in place, but the framework is made on the ground nearby (Fig. 3). A man begins with four poles tied together near the ends, with poles spread out in a star-like manner and the center tied area about 3½ to 4 feet off the ground. Other poles of about the same diameter and length are added between them, all tied in place with mopane bark into a conical pattern. Then, starting from the outside, a series of small flexible branches is tied at each pole, all around. Additional small branches are added at intervals of less than 1 foot in concentric patterns, again tied at every intersection with fresh or soaked mopane bark. Although they may tie a row or two of thatch to this framework at the periphery, usually the frame is lifted by several men and placed on the circle of poles which form the walls and then tied down in place. Concentric layers of thatching grass are then tied to the framework from bottom to top, providing a waterproof roof. Presumably if thatch were placed on the frame while the roof is on the ground it would be too heavy to lift into place.

Some entrepreneurs now cut and sell poles for hut construction. I also saw a number of kraals in which women had cut thatching grass and were selling bundles of it either for hut repair or new construction. Salaried employees who work for civil service or one of the government wholesale stores, or who own the larger privately owned stores or taxi services (using pickup trucks), are beginning to buy sacked cement to mix with local sand for bricks. They then hire local trained builders to construct rectangular houses covered with corrugated iron roofs, a status symbol in their society. Such houses usually consist of one or two rooms, but lack windows that open for ventilation, and the metal roof makes them much hotter inside than did the older thatched roofing. Some Ovambos also make cement bricks but use them only to make the upright walls of round huts, completing the roof with the typical conical thatched cover. Only occasionally does one see a hut with a padlocked door, probably one used for storage of tools, etc. Locked doors were not observed in 1947. Ovambos are exceptionally honest, and in all our travels in their country nothing was ever taken from our small house or camper, which we rarely locked.

Kraal Ownership and Inheritance

The kraal is independently owned for the life of the head of the kraal. At one time kraals were moved to new sites every few years or abandoned when an owner died. Now, however, desirable land is scarce and one site may be used for very long periods of time. Each kraal is located in a specific ward and controlled by a subheadman. The ward is a section of a larger unit called a district or *omakunda,* controlled by a headman. The Kwanyama area proper is divided into eight such districts and is governed by a council composed of the eight headmen from those districts. Land ownership lies in the hands of the headmen, who may pass on the responsibility to the subheadmen within their respective districts (Bruwer, 1961). The land is returned to the headman after the death of the head of the kraal and reassigned, never to his own son, but usually to his wife's brother's son, since this is a matrilineal society. A price must be paid by the new owner, usually a few head of cattle or more recently sometimes an agreed specific amount of money.

The Ovambos have a patriarchal system with the father as head of the household, even though they have a matrilineal inheritance pattern. Perhaps the position of the father has been somewhat weakened in the kraal organization, because so many men now accept 12 to 18 month contracts to work in the mines and a few on farms or as domestic laborers. Their wives are not allowed to accompany them. One of the reasons single men go out on labor contracts is to earn money for the bride price, if they hope to marry. Marriage in this society has been delayed, usually until the men are 25 or 26 years old, in order to increase cattle herds to a size that would allow paying the bride price, perhaps four to eight cattle, but now a cash settlement is becoming more common. Bruwer (1961) stated that in 1951 there were 8,387 (38%) adult males, many of them married, absent from the Kwanyama area. This means that in many families women were in charge of all kraal activities for extended periods of time while their husbands were away.

2. The Place of Men and Women in Kwanyama Society

In the polygynous society of this tribe men were traditionally herdsmen and carried on a few trades. Women were responsible for cultivation, planting and gathering of all crops and wild fruits and nuts, a few specialized crafts, the cooking of food, and brewing beer.

Much of the women's time was occupied by tilling, planting, weeding, harvesting, and storing crops. A short-handled hoe, *etemo,* is the only traditional tool used in the preparation of soil and for weeding. Women prepare the soil for planting seed, *okukuna,* by making hills, *oimangu* or *okandudu,* so that in the rainy season the crop area will not be completely inundated. Soil preparation does not begin until after the first rains.

According to Bruwer (1961) there is a definite selection of seed during the harvest season. The best seed is chosen, mixed with ash, and placed in clay-covered pots for storage until the next planting season. In pre-contact times a special ritual, *epitifo lombuto,* was performed before the planting season began.

The rainy season produces an abundance of grasses and broad-leaved weeds in cultivated areas. After the weeds have attained some height, the women begin weeding, *okohelela.* Some of the broad-leaved species are harvested as pot-herbs. Some grasses are cut and fed to livestock, and some are used for thatching grass. Weeding is done by the use of short-handled hoes, and most of the weeds not utilized are covered with soil to serve as humus. Crops may require weeding twice in one season. Sometimes women and their daughters from several polygynous households coöperate to weed one field, and then all go to their neighbors to weed. They can be heard singing and laughing as they work. A headman may ask for assistance from women within his district to provide some labor for his fields.

In addition to the principal gardens in the polygynous households, each wife is allowed a small personal garden, to be maintained by herself and her daughters, and to keep the crops that are produced from it.

Between 1947 and 1973 there were considerable changes in agricultural practices. These changes can be explained by the fact that there has been a transition from a predominantly and strongly polygynous society to a monogamous one, influenced by Christian missions. Previously a man usually had two or more wives to prepare the soil, plant the seed, do the weeding, and do all the harvesting. One wife cannot carry out all these activities alone. Years ago the missions attempted to introduce the plow pulled by a pair of cows or bulls, but at that time men were unwilling to assist in the fields. Now, however, throughout the whole area one observes men plowing fields with steel-shared plows, and a man may often be seen hoeing weeds in a field beside his wife. South of the Kwanyama area on one or two occasions I observed a tractor, which I was told is used in a coöperative for a number of kraals.

Harvesting (*etyo*) of the crop starts when the grain is ripe and dry after the rainy season. According to Bruwer (1961) reaping begins with only the poorer heads. This is done by stripping the heads (*okupweya omwe*) so that only the seeds are removed and fall into a collecting basket. These are usually the smaller heads of poorer quality and may be used immediately after winnowing without any ceremonial preparation. This work is done only by women and their daughters.

Harvesting of the better-quality grain then takes place by breaking off the whole head (*okoteya oilya*). When packed into large baskets (Fig. 4), these are carried to the threshing floor. Only women pick the heads, but both men and women carry the baskets. After threshing and winnowing, grain is carried to large granaries. Men will only carry baskets of harvested grain on their heads without fear of ridicule (Bruwer, 1961).

The threshing floor (*oshipale*) is located where it will get the best wind so the chaff will be blown away during winnowing. Sometimes a frame on which ears are temporarily stored, is built up off the ground at the threshing floor, but threshing must proceed at once to avoid loss to birds, termites, or rodents.

All threshing and winnowing is done by women, sometimes again in communal arrangements whereby women from several kraals coöperate, moving from one kraal to the next, singing while they work in a circle. A special winnowing basket is used to pour out the grain from overhead onto the threshing floor. Chaff is usually burned. One final step in winnowing (*okuyela oilya*) that must take place is the removal of small pieces of stalk

FIGURE 4. Large grain storage baskets used for storage of millet and Kaffir corn. These are the only baskets made by men, but women plaster the insides with clay mortar from termite nests.—A. Baskets being lined with mortar.—B. Baskets in place in thatched granary.

that do not blow away. This is accomplished by using as a sieve, a special basket woven from leaf fibers of the palm, *Hyphaene ventricosa.*

The threshed, winnowed grain is next carried to large granaries (Fig. 4) which are baskets woven by men but lined with a mortar made from the clay of termite nests by women. Granaries are always placed at least 18 inches off the ground and covered with thatched roofs. The granary itself is covered with a lid that is tightly closed to keep out rodents and insects.

Women are the chief gatherers of wild fruit from trees and shrubs. Some is eaten raw, and the excess is sun dried and stored for later use. Some fruit may be made into wine and some into a powerful brandy (*olambika*). The most common beverage is the beer which women make from grain almost daily. See details under Beverages.

In monogamous families all the foods are prepared in the kraal by the owner's wife or more mature daughters. In polygynous families the duties of wives are divided, as Loeb (1962) has pointed out. The first wife maintains the sacred fire, which was lit from the king's sacred fire, and all fires for cooking and lighting the kraal. The second wife is often assigned responsibility for pounding and cooking millet for the daily porridge; she may also be in charge of raising chickens for eggs and meat. The third wife is in charge or preparation of less important foods such as beans, groundnuts, squash, potherbs, etc. The fourth wife may be assigned the daily task of preparing beer. The first wife, however, always manages and designates the duties within the kraal. It is she who issues the foods to be cooked and sees that the jobs of cooking, making beer, churning butter, etc. are taken care of. Although there often is some friction among wives, they generally coöperate in the many tasks within the kraal, with some rotation of the various jobs. Now that the society is largely monogamous and a multitude of tasks is expected from one wife, more assistance is given by daughters, and I have even observed boys making butter in their big churns.

Women are the exclusive producers of household baskets. Men make only large granary baskets and some crudely woven flat sleeping mats from the fan palm leaves, *Hyphaene ventricosa.* Women cut and gather thatching grass, and may even sell some.

Ovambos love to catch and eat fish. Harpooning of the bigger fish was once common. The iron pointed harpoon (*ekupa*) was recovered with the attached twine made from leaf fibers of the fan palm or from *Sanseveria pearsonii* (*onghuse*), which were twisted and then braided. The women sometimes crush leaves of *Spirostachys africana* (*omuhongo*) to poison fish. The fish float

to the surface of ponds in the *oshanas,* where they are easily caught by hand, especially near the end of the rainy season.

Much more common, however, is employment of fish traps across the *oshanas* or the use of baskets, sometimes called dip-baskets. These are conical and up to 4 feet long. There is a smaller cone under the bottom of the basket with a hole varying in diameter from a few inches to somewhat larger, but usually not more than 6 inches, though Loeb (1962) stated up to 15 inches. These twined baskets are made loosely enough so that the water flows freely out the sides. There is a small hole in the top by means of which the women can reach in and remove the fish. They are made from twigs of *Grewia deserticola* (*omushe*), woven together with palm leaves.

A group of women often form a line across the *oshana* in water a few feet deep, and plunge the baskets briskly and vigorously up and down, forcing the fish up into the trap (Fig. 5). Loeb (1962) also says that some women sweep the nets sideways to scoop fish. Most of the fishing is now done with nylon seining nets that scoop up large numbers of fish at one time. Both men and women are now involved in fishing. The fish I observed being caught most abundantly were small silvery ones about 4 to 6 inches long, resembling sardines. In fact my informant called them "sardines" in English. There were also some pink-colored catfish up to 1 foot long. Nitsche (1913) first described this as follows: "The most important fish is the wels, the catfish or sheatfish (*Clarias gariepinus* Burch.). It comes from the Kunene River in great masses at the time of the flood (*efundja*) and gets as far as Etosha Pan, the salt content of which does not seem to bother it. This fish is caught easily. In years of plenty it is dried and serves as an article of trade. It burrows in the sand and remains inactive from one rainy season to the next."

Fish are caught in such abundance that some are eaten, some are sold, and all the surplus, especially the small "sardines," is sun-dried and stored in baskets for later use or sale. One of the few canned meats widely sold in African stores through the country is imported canned sardines. Fish make an important contribution of protein to their diet, not only during the rainy season, but other seasons as well.

It is appropriate that some discussion of pottery be included, since several plants are required in the process of making, curing, burning, and smoothing pots. Schinz (1891) first reported that

FIGURE 5. Twined fishing trap.

women pottery makers had a highly secretive guild. At that time pots were made only by the Ukambi, who made the best pots, and the Kwanyamas. Sckär (1916) gave a more complete description of pottery making, and Loeb (1962) gave further information, including the fact that in the Ondongwa area women were also making pots. At that time the once secretive process was openly displayed.

There were, according to Loeb (1962) only two kinds of clay pots: *osipifilo,* the larger ones used for beer, and *ositoo,* the smaller ones used for water. This is, however, an incomplete description.

Bruwer (1961) listed three different categories of clay pots involved in household use. The first category, *oitoo* (sing. *oshitoo*), are used for storing liquids. The large pot with a constricted opening at the top and usually drawn up into a short neck, *oshitoo shomalodu,* is used for fermentation and storage of beer. The smaller ones, *oshitoo shomeva,* are employed for drawing and storing water. Bruwer noted that they are sometimes used also for storing seeds.

The second category, *ombija* (pl. *oimbija*) have different forms and uses. They are not constricted at the top and have a wide opening like a bowl. The pot used for cooking porridge is called *ombija jouvalelo,* and the one used for cooking beer before it is fermented is *ombija jedungo,* bigger and somewhat elongated. Smaller pots include *ombija jombelela* for cooking meat; *ombija jevanda* for potherbs; and *ombija jomusha* for pumpkins, groundnuts, beans, etc. In 1947 clay pots of various sizes and styles were widely used in kraals for cooking. Now, however, especially nearer the larger trading centers, they have often been replaced by one or two cast iron pots. Pottery is still widely used (in 1973) in preparation of beer, marula wine, brandy (*olambika*), and for water storage.

The third category had no generic name, according to Bruwer, but did have a variety of specific uses within the kraal. The *oshikundu* is used for drinking rough beer, which may be a beer to which no fine millet flour has been added, or as indicated by Loeb (1962) it may be a morning drink from malt sediment, used especially in time of famine. The *oshikundu* (Bruwer, 1961) are of two types: *oshimbudju shoshikundu,* a general one, and *okambudju kamueneumbo koshikundu,* a special smaller one used only by the kraal owner. There are also *oluijolukulila,* a pottery dish for butter; *oshipepuilo shomashini,* a pot for holding fresh milk; *otiti,* an eating dish; and *olufinda lopupinda,* a small shallow pot with a handle. Most of the pots of this latter group are no longer in widespread use. Milk and butter are usually stored in wooden buckets or gourds, and eating dishes are now nearly always woven, flattened plates from fan palm leaves, woven as their baskets. Clay drinking cups are largely replaced by carved wooden cups from *Commiphora* spp. (*omboo*) or glass pint or quart Mason canning jars.

To make pottery, first a special pottery hole (*onjibolo*) must be dug in the ground, as much as 10 feet deep and 6 feet in diameter, and partially covered with poles, branches, and sand. Each potter has her own pit which she uses for a long time. At one time special rites were performed to prevent the pots from cracking. Then clay must be gathered and mixed to the proper consistency. The actual shaping and drying was done in the protection of the hole.

Ovambos neither make any coiled pottery, nor do they employ a potter's wheel, yet their pots are remarkably spherical, although they are built up from a lump. Sckär (1916) gave an excellent description of the process: "When the new moon appears, the potter begins her work. She goes at sunrise to get her clay and takes it to the pit. On her way she dares speak no word, and no one dares speak to her. In the evening she shapes the clay until it is fine and stores it in pots as if it were butter. The next morning she returns to the pit and begins to make her new pots. She shapes each one by hand, using the building-up method, and can make as many as five in the morning. Using both hands, she presses a hollow in the lump of clay; and then with her right hand she works up the walls while at the same time she uses her left fist as a counterweight to press down in the center and outward on the inner walls. Finally she smooths the walls, on the inside with the hoof of an ox's right forefoot and on the outside with an ox's rib."

As the potter leaves the hole, she seals it with branches and soil, and the pots are left for six to eight weeks in the hole to dry. The dried pots are rubbed with the crushed bulb of an unidentified plant called *ediodio* to prevent cracking.

Next, a kiln (*oshofo*), consisting of a shallow hole in the ground, is dug. Hardwood charcoal is packed around the pots in the hole, the kiln is fired, and the hole is covered with earth. Loeb (1962) states that the fires burn all night and pots are removed in the morning. Actually, however, the pots are not taken out until they are completely cooled, which may take as much as two weeks, whereupon they are ready for use. They have no glaze and are never decorated. The outer surface is black, brown, or mottled, somewhat rougher than similar pots of many other parts of the world because the clay is poorer here. Loeb (1962: 196) mentioned that the potter pulverized the bark of *Colophospermum mopane* (*omufyati*) or from the plant *omunghafi* and then boiled and mixed it with wood ashes. This mixture was rubbed on the outside of the pots to strengthen and keep them smooth. I have been unable to find a Kwanyama name like *omunghafi,* and identity of the plant remains uncertain.

The clay always contains certain impurities, especially sand. The precautions taken, such as slow drying, show that the clay is of rather poor quality in the Kwanyama area. This may explain why pottery making has not become a more refined art among these people. There no longer are ceremonies, rites, or sacrifices associated with pottery making. Kilns are widely distributed in different areas within the territory. The women

keep the pots they need for their own household and sell the others.

Traditionally men have been responsible for the complete care of the livestock, principally cattle, which represent their main wealth, and to some extent of goats. Boys do much of the herding, particularly of their maternal uncle's cattle, which they will normally inherit in this matrilineal society. Men have an important part in other arts and crafts in their material culture. In recent years many have contracted to work in mines, in agriculture, and other jobs in the south outside their homeland. Some of the crafts and artistic skills used by men will be mentioned here.

One of the major responsibilities of men is to make and maintain the kraal huts and fences. They cut poles to make the palisade walls, but thorn bushes are used for animal enclosures or to protect the garden plots surrounding the kraal. All the carving of many wooden household containers and utensils is done by men, using mostly hard woods. The carving and decorating of wooden cups is one of the highest artistic developments by men among the Kwanyamas. They carve a variety of items used in their culture such as snuff boxes, drums, dolls, and mortar and pestles. They also make all tool handles, such as hoe and axe handles, and the weapons used, such as bows, arrows, assegeis, knobkerries, harpoons, and knife handles and sheaths.

It was claimed by Loeb (1962) that there are only two recognized professions among the Kwanyamas, blacksmiths and doctors, and these are exclusively masculine except for midwives and women diagnosticians at the lowest level. Both professions he stated have special periods of apprenticeships and special initiation rites. The more advanced received the spirits of earlier practitioners. Blacksmiths were expected to be strong physically, but this was not required of doctors.

Sckăr (1916) distinguished between ordinary and true or master blacksmiths. The latter had special initiation rites that included killing a relative and taking some organs from the corpse to a doctor. These the doctor would cook, mix with ox meat, and give to the initiate to eat. Cannibalism has not been practiced in this part of Africa since the advent of European exploration in the middle of the nineteenth century, so the tradition must have been modified more than a century ago. Loeb (1962) said that in 1948 blacksmith rites had been simplified but that the master blacksmith was considered to be a magician as well as blacksmith. The simplified rites included the mingling of blood from the cut wrists of the master blacksmith with that of the neophyte. Special magic songs were sung, and a special drink of supposedly boiling, or at least bubbling, water heated by the master blacksmith with a red-hot iron was drunk. No indication was given of the number of masters compared to ordinary blacksmiths. In 1973 I could find no evidence of rites or ceremonies for blacksmiths. Blacksmithing is a dying art, and pilgrimages into Angola to dig and smelt iron ore are no longer made. Cheap iron implements such as axe and hoe blades are now sold in local stores, but some of the more special iron products are still made by blacksmiths.

One blacksmith, Gabriel Hidengwa, who had learned blacksmithing over 40 years ago in Angola, had never heard of the special initiation rites mentioned by Loeb (1962). He said blacksmithing is learned in two to six months, depending on an individual's aptitude. He is now a wood carver and spends more time making cups and utensils for sale than blacksmithing. He exhibited some wooden bellows (*omalutumbo*) which he made about 40 years ago and still uses occasionally in his forge (*eleva*).

Men are the principal persons involved in the medical profession and in making magic. See the section on Medicinal and Magic Plants for details.

Although Loeb (1962) lists only two professions, blacksmiths and doctors, there have been many occupational changes since 1948, when these observations were made. Many of the present day occupations would not be classified as "professions," but certainly teachers in public or mission schools and Christian ministers would be. The following list gives a brief summary of the changes in occupations by men in recent years:

1. Storekeeper: *omulandifi*, including those who sell beer.
2. Repairman: *omupangeli* [one who repairs]:
   a. Bicycle repairman: *omupangeli weembashikela.*
   b. Auto and truck mechanic: *omupangeli womahauto.*
   c. Electrical repairman: *omupangeli womalusheno.*
   d. Mender of buckets and pans: *omupangeli womavela.*
   e. Radio repairman: *omupangeli weeradio.*

f. Stove and lamp repairman: *omupangeli weelamba.*
g. Repairer of watches and clocks: *omupangeli weevili.*

3. Woodcarver: *omuhongi* [teacher] *womaholo.*
4. Barber: *omukululi.*
5. Blacksmith: *omuhambuidi.*
6. Brickmason: *omufolomi.*
7. Brickmaker (of cement and sand): *sofolomi.*
8. Carpenter: *kalupindelu* (an adapted word), *omupangeli.*
9. Plumber: *omulongi* [worker] *wominino.*
10. Road repairman: *omulongi* [worker] *womoitauwa.*
11. Heavy equipment operator: *omukombi womoitauwa.*
12. Teacher: *omuhongi* [teacher] *wofikola* [of school].
13. Nurse: *omuhakuli* (a profession mostly of women).
14. Seamstress: *omuhondji* [one who makes clothes] (a women's occupation).
15. Basket maker: *omutungi* [one who makes] *woimbale* [baskets] (women).
16. Potter: *omuhongi* [teacher] *woitoo* [of pottery] (women).
17. Washer of clothes: *omukoshi woikutu* [*oikuto* = clothes] (by women).
18. Ironer of clothes: *omukanquli woikutu* (by women).
19. Office worker: *ovalongi vomeembelewa:*
    a. Post office: *omunapoosa* [*opoosa* = post office].
    b. Typist: *omushangi wokomashina, omutopatopi.*
    c. Clerk: *hamushanga.*
20. Butcher (mostly of goats for sale): *omulandifi wombelela* [*ombelela* = meat].
21. Manager of a café (seller of cooked meat from an iron pot): *omoshingifi omulandifi wombelela.*
22. Baker (of small loaves of bread): *omuteleki weemboloto.*
23. Fisherman: *omkwati weeshi* [*eeshi* = fish].
24. Grain farmer (one who sells extra grain): *omulandifi woilya.*
25. Transportation serviceman (taxi and freight in a pickup truck): *omututi woshipota.*
26. Fence repairman (along border, employed by the South African Police): *omulongi* [worker] *wodalate.*
27. Police (as those working for the Customs office at the border): *omupolifi.*
28. Miner (in Tsumeb or other southern mines): *omulongi womomina* [worker in mines].
29. Interpreter: *omutoloki.*
30. Doctor and persons in related professions:
    a. Midwife: *omudalifi* (woman who delivers babies, especially away from hospitals).
    b. Homosexual doctor: *eshenge* (my informant said there are still a few around).
    c. Herbalist: *ondudu onganga* (does not have any magical powers).
    d. Master doctor (Loeb's "witchdoctor"): *omupuliki* (this is the highest class, have magical powers, but almost none of these remain).
31. Seller of thatch: *omulandifi womwiidi* (by women).
32. Seller of kraal materials (i.e. poles, usually *mopane*): *omulandifi woiti.*
33. Radio announcer: *ovaleshinghundana voradiyo.*
34. Minister or priest:
    a. Lutheran: *ovafita-ongalo ovahongi.*
    b. Anglican: *ovapilisteli ovahongi.*
    c. Roman Catholic: *pata* (sing.), *oopata* (pl.).
    d. Dutch Reformed: *ovahongi vongeleka.*
35. Musician (especially of a one-stringed instrument): *ovashiki.*
36. Servant (as in kraal of a headman): *omupiya vonxumba ompia* (pl.: *ovapiya*).
37. Slave (once captured in war, no longer found): *ompika* (pl.: *ovapika*).

Slaves and servants were commonly used to serve kings and headmen in the olden days. Slaves were conquered in war, and Lebzelter (1934, Vol. 2) believed most servants in his day were former slaves. Servants today are given food, clothing, and protection. They can leave any time they wish, but rarely do so. Because land costs are high, the few head of cattle and food required until one's crops begin to produce are costly. Few are able to accumulate the capital needed.

Bruwer (1961) stresses the significance of the large number of men who accept labor contracts outside the native homeland to work in mines and to a lesser degree in cities and on farms. The South West African Native Labor Association (referred to as SWANLA) has been given the responsibility of recruiting labor. Contracts were once limited to 18 months and required that the native must be returned to his homeland, but periods have been shorted. Bruwer states that in 1951, 8,387 Kwanyama men were absent for

TABLE 3. Labor recruitment among Kwanyamas[a].

Category	1956	1957	1958	1959
Class A (mines)	2,787	2,781	2,990	2,925
Class A (farms)	295	260	437	871
Class B	418	494	539	641
Class C	611	494	415	422
Totals	4,111	4,029	4,381	4,859

[a] From Bruwer, 1961, Table XVIII.

contracts, which was about 38% of the adult male population.

Africans are given physical examinations when they apply for a contract, and they are classified on the basis of the physical kinds of work they can do. Class A identifies those fit for work underground in the mines or on farms. Class B identifies those fit for surface work at the mines or in industry. Applicants in Class C are suited only to light domestic work or light farm work. Wages vary according to the kind of work, with those in mines getting the highest wages. Table 3 shows categories of men recruited by SWANLA in a four year period from among the Kwanyamas.

The Significance of Plant Materials in Rites and Ceremonies

The coming of a child into a family is an occasion for great joy and celebration. After the birth of a child in early times, there was a purification ceremony (*oshilombe*), which the mother underwent before assuming her regular domestic duties. It was performed by midwives who put lumps of porridge dipped in gravy in her mouth. She was also rubbed with millet and fresh red ochre mixed in vegetable oil or butter. The father named the child in a special ceremony. Mothers nursed their babies until about the third year, if they could supply the milk. At the end of the third year there was a special transition ceremony (*okululo*). The baby's head was shaved and the baby decorated with beads. The baby (*oshihanana*) now becomes a child (*okaana*). He is weaned very abruptly by putting the bitter juice of *Aloë esculenta* (*endobo*) on the mother's nipples to discourage continued breast feeding.

Young girls assist their mothers in daily household tasks, and young men assist their fathers and in their teens their matrilineal uncle, with whom they live a great deal of the time. At an early age every boy not only herds cattle, but also has a bow and some arrows to practice hunting. As boys get older they assist their fathers or maternal uncle in construction or maintenance of kraal fences and huts, and they develop other skills.

Estermann (1960) discusses the celebration of *ioyou,* the parting of childhood. Bruwer (1961) found the participants in Ovamboland were usually pre-puberty, about ten years old. The children erect miniature kraals, using millet stalks, with sleeping huts and an *olupale* (meeting place). Boys and girls both participate and imitate being adults in play. They sing and dance in the evenings. Bruwer claims it is not nearly so important in Ovamboland as claimed by Estermann among the Kwanyamas further north in Angola.

The *efundula,* puberty rites for girls, is perhaps the most significant one among their traditions. Hahn (1928) described *efundula* as a time which lasted three to four weeks and consisted of tests of endurance and virginity (or at least non-pregnancy) and involved pounding millet in a mortar and pestle and much dancing, etc. Loeb (1948) states the ceremony lasted only four days. Twenty or more girls participated in the ceremony, which was given near the kraal of the headman from different districts annually. Bruwer (1961) says the ceremony was shortened and simplified and was given only every few years: in 1952, 1956 and 1960. It was given once in 1973, and only about ten participated according to my informant.

On the morning of the first day of the *efundula* the girls and their female attendants come to a kraal with special sleeping shelters for the girls. The *ovafuko,* as girls in this stage are called, are dressed with a special tassel in their hair consisting of strands of the berries of *Jasminum fluminense* called *oshihamulende,* and the tassels are smeared with red ochre. Loeb et al. (1956) also report that the berries of *Salvadora persica* are used for this purpose. Rattles called *ofiti* made from cocoons with pebbles inside are tied to their ankles. Girls wear skirts made of layers of white ostrich egg shell beads which they have gradually accumulated over the years for this purpose. Each girl carries a wand, *efungu,* formerly made from an ox tail but now sometimes made from horse tails, and one frond of *oshiveta, Blechnum punctulatum,* is worn in her hair. Between dances the girls are rubbed from time to time by their women attendants with red ochre and fat. Most of the day is spent dancing to the rhythm of long log drums, *ongoma.* The drums are specially tuned

for the occasion and are beaten with two sticks. The rhythms are sometimes set by beating two hoe blades together, sometimes by a man. A wooden whistle, *epoli,* sometimes replaced by metal police whistles today, was blown at intervals. The girls dance in a large circle, going backward and forward in rhythm, holding their wands erect during this endurance test. Relatives gather around and shout encouragements to tired dancers.

Several other plants are significant in the transition rites. Berries of the plant Loeb et al. (1956) called *omutiuejoka* [tree-of-the-snake] along with the seeds of *omuve, Berchemia discolor,* are attached to the hair with mastic from the fruits of *omwandi, Diospyros mespiliformis.* These may then be covered with red ochre and fat. On the second day of the *efundula* the girls also go through several ceremonies relating to fertility and childbirth. One ceremony involves beer drinking. Another involves crawling between the legs of an old man. Dancing continues through the second day and evening.

Part of the third day involves killing of oxen by the girls' fathers. Intestines are filled with fat and hung as necklaces for each future bride, continuing the dancing into the fourth day.

On the fourth day the future brides are washed with water and millet flour. They are specially dressed with garlands and bouquets. On this day a palm leaf from *Hyphaene ventricosa* is tied across the shoulder by the best friend of her future husband. If the girl does not wish to marry the man who had it put there, she removes it, and another may ask for her hand. The crucial pregnancy test also takes place on this day as each girl steps over the forked branch of a young mopane tree, *Colophospermum mopane.* Another ceremony in the evening consists of being carried around the kraal on the shoulders of the best man. The *ovafuko* has about 70 pounds of special decorations, beads, and clothing on at this time. The girls take great delight at this time in imitating men and carrying whips with which to whip men they meet.

In the week after the *efundula* the girls begin a new phase of transition before their marriage. They are smeared with white clay and ashes and are known by Europeans as "ash girls," *oihanangolo.* They also now have a completely new costume, actually the costume of a bride. The headdress has five peaks, which are stiffened with fibers, usually from the palm, *omalunga, Hyphaene ventricosa,* or sometimes reinforced with sections of ox horns. Some human hair is used in preparing the headdress but if there is not enough human hair, it is necessary to use false hair made from finely shredded palm leaves dyed black. Final sewing on the hair is with fiber threads made by pounding the leaves of *Sanseveria pearsonii, onghushe.*

Each ash girl has several strings of beads around her neck and under her arms. Some of the beads may be made from the spiny leaves of *edundu,* the succulent-leaved *Aloë zebrina.* Its spiny structure has protective qualities. Stems of *oluliavala,* Kaffir corn, and other plants are also cut up and made into necklaces.

Ceremonial skirts or aprons are also made from the *Sanseveria pearsonii* fibers. Each girl carries one or more wooden whistles, most of which they cannot blow because they are filled with magic herbs, and a stopper is made from fibers of the native cotton, *osinduduandiba, Gossypium herbaceum* var. *africanum,* a perennial bush.

Two marriage ceremonies follow. The first is when a man takes his wife. The second takes place when he is ready to have a kraal of his own, or more correctly when his wife has *okupaka omafia,* literally the place of three cooking stones, or a place where she does her very own cooking.

The Sense of Community

Occasions for group participation in tribal life in olden times were provided in many ceremonies, rites, and rituals associated with their native religion. Planting and harvesting ceremonies brought people together in social groups. Annointing and crowning of a new king was an occasion of great feasting and celebration. Births, weddings, and funeral observances also provided large group gatherings. Little has been studied, and nothing found published, about changes in recent years that have affected the socializing of the Ovambo people. It was my opportunity to observe the older traditions in 1947 (see Loeb, 1962), which had changed very little until then because of Kwanyama isolation. I wish to record my observations and a short evaluation of changes among the Ovambos at the time of my 1973 visit.

The political changes that had taken place contributed to the new society. With the passing of the divine kings after 1917, there was a gradual change in political structure. European appointed Native Commissioners took the place of the king, but traditional headmen continued to administer their respective districts. Now further

change has brought into being an Administrative Council, a legislative and administrative body, a combination of headmen and elected representatives from Ovamboland. However, because there was no longer a king, many rites and rituals associated with kings gradually died out. One such discontinued tradition is the lighting and maintenance of the "sacred fire." It was lighted from the king's fire, kept burning in each kraal, and it was taboo to use it for any purpose other than to start other fires in that kraal.

The native doctors were looked upon as men with supernatural powers who displayed magical powers in many ways, but they lost their influence over the people, and the practice died out. They had supervised the religious rituals of the life cycle. With the decline in their power has come the decline in observation of the rituals they supervised. These have been replaced to some degree by Christian confirmations, weddings, and funerals in a society now predominantly Christian. My own estimate is that at least 90% of the Kwanyama speaking people are at least nominal Christians.

Some traditional cultural aspects have changed since 1947. At that time polygyny prevailed, but now this is rarely found. Christian influence has now resulted in a monogamous society. When there is only one woman in a kraal, there is a loss of contact with human beings. Previously only women cultivated the fields, and usually all the wives of one man worked together cultivating the millet and sorghum. Weeding was done at least twice during the rainy season. Men now work next to their wives cultivating a field. Men and women from several kraals sometimes coöperate, working and moving from one kraal to the next, working in groups, singing and joking as they hoe weeds. Also women still gather from several kraals when ripe fruit falls from the marula tree, and they sit around squeezing out juice, which they collect in large clay pots for marula wine. They also gather in groups in a kraal to drink the wine the next day. These are times for gossip and socializing.

A new factor of small businesses has entered into the cultural pattern. Formerly bartering took place for such items as thatching grass, iron implements or carved utensils, exchanges of food, gourds, pottery, hides, etc. Such exchanges were made informally on an individual basis, never in crowds or with groups, and never in special buildings or "stores." In 1947 there was one small store operated by Europeans serving over 300,000 Ovambos. It sold mostly cloth, sugar, flour, knives, and a few necessities. Now there are 3,000 registered shops and an estimated 3,000 additional unregistered ones. Many of the latter are insignificant, selling only a few items such as native beer, matches, and tobacco. Others are well built and well stocked with dried and canned foods, sugar, coffee, tea, hardware, blankets, cloth, ready-to-wear clothing, kerosene, batteries, radios, flashlights, spare parts for bicycles, etc. Some sell chilled Coca-Cola in kerosene-burning refrigerated dispensers. Sometimes the bigger stores and beer shops are clustered. What is more significant is that these clusters of stores have become social centers. Not only do men and women stop by for a beer, or to buy some freshly killed goat meat or other food, but they sit and talk together. In the evenings there are bright kerosene or petrol lanterns lighting the area, and people gather socially. They also dance and sing a lot. Very few become intoxicated. This type of gathering is something new for Ovambo society.

In some areas where no permanent stores had yet been built, people gathered in clusters for an open-air market one day a week, just during the day. Some brought goods like furniture to barter. Some brought a pot of beer or sold food, like cooked goat's meat, or ripe guava or citrus fruit. One man brought puppets, operated with his feet, which danced while he played a rhythm instrument with his hands. Some brought fresh fish to sell, just netted from a nearby *oshana,* as it was the rainy season. People were happy, laughing and having a wonderful time, mostly just talking in small groups. Since most of the conversations were not in English, I do not know what topics of conversation prevailed. I asked a few questions which were answered in English by some. They did not appear to be politically oriented, nor was there probably one dominating theme. Rather it appeared to be a spontaneous expression in group gatherings instead of staying isolated in their own kraals. The basic human need to socialize appears to be met in the new changing cultural patterns and religion which serve as a substitute for older traditions.

3. Plants in the Kwanyama Culture

Carved Wood

Many household containers and utensils are carved from local woods by men. Hardwoods are generally used for tool handles of axes and hoes and for wagon tongues. Examples include *Terminalia sericea* (*omwandi*), considered the best for tool handles (Fig. 6), but others include *Acacia giraffae* (*omusudi*), *A. hebeclada* (*omutokai*), *Colophospermum mopane* (*omufuti*), and *Peltophorum africanum* (*omupalala*).

All the cups and buckets are carved from softer, usually white but strong woods, and the cups are artistically decorated (Fig. 7). In 1947 nearly all beer and wine was served in these carved cups; most beer in shops and in many kraals is now drunk from pint or quart Mason jars. The standard wooden beer cup (*ehalo lomahidi*) has a volume of 5–6 oz. In the past it was covered with little palm fiber woven lids. A cup of about half this volume (*ehalo lomaenge*) is used to serve marula or other fruit wines or brandy (*diambika*).

An active carver, Gabriel Hidengwa, explained the process of carving to me as follows. His favorite wood is *Commiphora africana* and *C. angolensis* (both called *ombeo*), or *Combretum engleri* (*omulondavuuma*), but he uses also *Peltophorum africanum* (*omupalala*), *Berchemia discolor* (*omuve*), *Albizia anthelmintica* (*omuhangati*), and *Ricinodendron rautanenii* (*omunghete*). He collects his own wood, and the *ombeo* designated for cups and buckets must be cured in the sun for one to three months, being turned over every day. The bark is not removed until the carving begins.

He makes not only regular beer and wine cups, but also a special chalice or goblet (*ehalo lomhuambi*) (called *ehalo lokunuuna*, fide Tobias & Turvey, 1971) with three supporting posts from a solid base, or only one central supporting post or stem.

Cup-carving tools consist of a small spatulate knife (*ononga*) and the heavier *onghowalola*, which has a pipe handle and is used to carve out much of the inside of the cup or bucket. He keeps his tools very sharp. For burning narrow designs he uses an *eshubengo*, a rod about ¼ inch in diameter; for wide flat parts to be burned he uses an *omukonda*. He keeps several of each kind of instrument in the fire as he works. It takes about ½ hour to decorate one cup. Perhaps seven or eight tools are kept in the fire at all times so as soon as one cools he can pick up another of the same, or a different type for a different design or surface (Fig. 8). All designs are geometrical configurations, never animal or floral figures. Cutting tools are used for the final finishing in order to sharpen the contrast between burned and unburned areas. The designs and patterns are nearly identical to those obtained 25 years ago from other wood carvers in the same area.

Such an artisan also makes buckets, usually carved from *ombeo* wood. There are two types: (1) *ehalo lokukanda*, containing about one gallon, and used especially for milk, with a special place to fasten a rawhide handle, and (2) a smaller bucket, *ehalo lomasudi*, to store butter. These buckets rarely have ornamentation. Where a palm tree (*Hyphaene ventricosa*) does (they are strictly protected by law), the trunk may be carved into a water trough 6 to 8 feet long with the axis lying horizontally. They also may take a trunk section about 3 feet long and, keeping it upright, like a barrel, hollow it out to make Kaffir beer (*omalodu*). *Ombeo* wood is also used for shallow basins (*ehalo lokalilila*) used for eating purposes, especially curdled milk. A small jar-like container (*ehalo lokanawila*), usually with a carved lid, is used to store vegetable fats and oils and mixtures of fats with red ochre to be used as a cosmetic. None of the latter were observed in 1973, because the use of red ochre is rare.

Cylindrical snuff boxes (*olenya*) are carved, according to Loeb (1962) from *Berchemia discolor* (*omuve*), *Diospyros mespiliformis* (*omwandi*), or *Ochna pulchra* (*omuve*). A small lid is fashioned from calabash, *Lagenaria siceraria* (*ehupa*). A cord holding a small snuff stick made of iron or wood of *Euclea divinorum* (*omudime*) is attached to the snuff box. Snuff boxes are also sometimes carved from cow horn.

One occasionally sees a wooden rake (*olukolo*) used on the threshing floor to rake up small branches and stems after grain has been threshed.

The drum is the one universal musical instrument throughout southern Africa. The Ovambos have two different types, both carved and played only by men. These now are fairly rare, probably because most people have battery-operated transistor radios and listen many hours a day to the FM radio station in Ovamboland. Most of the broadcasting is their own music with distinctive

FIGURE 6. Ovambo hoe, the blade from locally mined and smelted iron, the handle from natural crotch of *Terminalia sericea*. Blades are now made cheaply in South Africa.

FIGURE 7. Carved wooden beer mugs with burned designs, from *Commiphora africana*. The size of the mugs and the designs on them have not changed in 25 years: the mug at the upper left was given to the author in 1947, the others were purchased in 1973.

FIGURE 8. Craftsman burning designs on beer mug carved from *Commiphora africana*.

rhythms, but some European or American classical music and hymns are included. The larger type of drum (*engoma* sing., *ongoma* pl., for all drums, with plural form usually used), about 5 feet long, is carved from one log with a one-foot opening at the top and tapered to a blunt point at the lower end. This lower end has two small holes on the side which are necessary for air exchange when the drum is beaten. They are usually made of hardwoods as *Pterocarpus angolensis* (*omuuva*) or *Sclerocarya caffra* (*omuongo*). After the drum has been hollowed out, usually by a professional drum maker (*ohaihokua*), a moist untanned skin is stretched over the end of the drum and allowed to tighten as it dries. The drum maker may later apply beeswax (Loeb, 1962) to tune it. The smaller drum is made in the same way and in the same shape, but is only about 3 feet high and has a higher pitch. They may be played with special drum sticks (*onghongholifo*). They are employed for rites and ceremonies, since in this part of Africa there is no regular communication of messages by drum.

Dolls are carved by men from a single piece of wood, usually from a tree crotch. The dolls (*oipipolo*) (Fig. 9) sometimes have the upper parts made from a clay-beeswax mixture (Loeb, 1962), which is pliable. The eyes, nose and mouth are represented by seeds or colored beads pressed into the clay. The dolls, if female, are given female features and molded breasts. They are dressed in the traditional dress with an apron in front and back; the clay and dress are then covered with red ochre, like the bodies of women who wear this kind of clothing. Strings of shell or glass beads may be put around their necks.

A very simple and common doll I assume to be a toy, since children may often be seen playing with them, consists of the twin fruits, i.e., two seeds fused together (*endunga*) of the fan palm, *Hyphaene ventricosa* (*omulunga*). The seeds are about 2 inches in diameter and spherical when

FIGURE 9. Kwanyama dolls.—A. Family doll from crotch of *Diospyros mespiliformis*; head and bust molded from clay-beeswax mixture.—B. Child's play doll from twin-seeded fruit of palm, *Hyphaene ventricosa*.

single. The dolls are called *okanakondunga*. Loeb (1962) states that facial features are carved into the leathery skin of one seed, the other serving as the body. I have observed, however, that many have no carved facial features, only an apron or skirt for clothing, tied at the constriction between the two seeds (Fig. 9).

Loeb (1962) mentioned five types of dolls, some made of wood. These are usually related to courtship or fertility traditions of pre-contact and much of their traditional significance has been lost in the present Christian-dominated culture. His five categories were: (1) pre-pubescent girls' dolls, (2) puberty and courtship dolls, (3) clay family phallic dolls, (4) clay pregnancy charms and courtship dolls, and (5) tourist dolls. Most dolls were highly prized as heirlooms, but this is no longer true.

Wooden spoons of a very simple design are used in stirring porridge and cooking vegetables in the kraal. Because all food is eaten with the fingers, there has been little development of such eating utensils as spoons and forks. A petiole of the fan palm, *Hyphaene ventricosa* (*omulunga*), is the favorite material since very little shaping

FIGURE 10. Carved wooden spoons from *Commiphora africana*. Burned-on designs are similar to those found on beer mugs.

is involved. Leaflets are removed and the petiole is cut off about 2 feet above its base. Then the widened base is rounded off to serve as the cup, and the edges of the upper part are smoothed off for comfort in handling. Such spoons (called *ongute, olufinde,* or *olunue* by Tobias & Turvey, 1971) are sometimes made of such woods as come from *Combretum apiculatum* (*omunaluko*), *Diospyros mespiliformis* (*omwandi*), or *Ricinodendron rautanenii* (*omunghete*).

In 1947 some of the wood carvers were making beautifully and uniquely designed ornamented spoons of *omboo* wood (Fig. 10), presumably based on ideas obtained from and perhaps encouraged by missionaries. The designs were burned on with the same techniques and designs as for wooden cups.

Men carve wooden mortars and pestles in the absence of stones (Fig. 11). Although both are hard, the mortar is always made of slightly harder wood. The mortar or base, called the stamping block by the Kwanyamas (Afrikaans "stampen block"), is usually made of the heartwood of Rhodesian ash, *Burkea africana* (*omuntundungu*), or sometimes of leadwood, *Combretum imberbe* (*omukuku*). Gabriel Taapopi (pers. comm.) says *Pterocarpus angolensis* (*omuuwa*) is also sometimes used. The pestle is obtained from heartwood of *Colophospermum mopane* (*omufyati*). Although Bruwer (1961) stated that the mortar is always embedded about halfway in the ground, there often are one or more portable mortars which can be carried to shady or protected places. Clay from nearby termite hills is moistened and compacted around the embedded mortar, extending for some distance around it. The clay is made very smooth and hard so that flour, grain, body powder, etc. which spills from the mortar can easily be picked up without mixing with soil particles. Women use a small broom

FIGURE 11. Women pounding grain with mortar, *Burkea africana*, and pestle, *Colophospermum mopane*, in 1973.

that men make from a grass, *Aristida junciformis* (*oshikateko*), or sometimes from the leaves of the fan palm, to clean the area before starting their pounding. The brooms are used to sweep all the flour into one pile so it can be put into one of the large storage baskets until needed. Although these wooden stamping blocks and pestles are used to stamp millet (*omahangu*) and sorghum (*olulyavala*) very satisfactorily, they are not hard enough to stamp mealies or maize, *Zea mays* (*epungu*).

Mortars and pestles are used to pulverize dry leaves of several species (see cosmetics in Appendix) for body powders to reduce body odors and provide a pleasant scent. They are also used for pounding seeds of many species of plants (see foods and cosmetics in Appendix) for cooking oil or oil to mix with red ochre for cosmetics.

FIGURE 12. Gourds from *Lagenaria siceraria*; each of the four gourds shown has a separate Kwanyama name and a distinctive use. Dipper gourd on left has engraved design, colored with charcoal; tall gourd in rear has modern, burned design.

The decoration of gourds (Fig. 12) is done only by men. The more traditional, simple geometrical designs were scratched or filed, and scratches were sometimes darkened by burning. In 1947 there were also rather ornately designed gourds with burned figures of people and animals, telling the story of a hunt or battle. These were perhaps a recent innovation, and the figures were not of the quality found on the wooden cups.

The Kwanyama probably originally slept on the ground on sleeping mats. Some still sleep this way, but many now purchase manufactured beds with mattresses or mattress pads.

Ovambo men also manufacture another kind of bed consisting of four sticks embedded in the ground with four rails tied to them with mopane bark, *Colophospermum mopane* (*omufyati*). A number of long slender poles are laid on this framework, which is somewhat larger than a double bed, and it is then covered with tanned cowhides. Additional cowhides were used as covers. Men carved wooden pillows from *omboo* to be used on this bed. In polygynous kraals, wives always had double beds, because the girls slept with them until puberty and the boys until they were weaned (Loeb, 1962). When the head of the kraal visited his wife at night in her hut, the children all left and slept in another hut in her compound.

Weapons

Men constructed all the weapons and knives used in their society. Since before colonization there was constant warfare between neighboring tribes, mostly over cattle, but sometimes over slaves, they developed an assortment of weapons. They also performed rituals both before and after battle, for cleansing purposes. They used bows and arrows, spears, knives, knobkerries, etc. until the late nineteenth century, when European traders, Portuguese to the north, and English, Dutch and Germans to the south, began trading rifles for cattle. Even then only a few rifles were imported, principally for the use of kings and headmen. In 1947 many Africans had rifles,

but distribution of ammunition was strictly regulated by law. Thus, possession of a rifle was primarily a mark of distinction. Many of these rifles were old 303 English Enfield rifles, left over from World War II. At that time it was possible to obtain a permit from a headman to hunt game for food, if one gave him a few cartridges to shoot game for himself. Now most of the game in the Kwanyama area is extinct, and in 1973 no rifles were observed.

Of all the weapons used in earlier times, both for warfare and hunting, bows and arrows were perhaps the most significant. Very young boys were given a bow and arrows. The bow was usually made from small branches of *Terminalia prunoïdes* (*omunghama*), or *Ricinodendron rautanenii* (*omunghete*), although sometimes the slender petiole of the leaf of *Hyphaene ventricosa* (*omulunga*) was employed. These were 3 to 3½ feet long, as compared with an adult bow which might be up to 4 feet long. Children's bows were often strung with fibers from the leaves of *Sanseveria aethiopica* (*omuse*) or *S. pearsonii* (*onghuse*). Boys chiefly hunt birds, using wooden arrowheads made from *Gardenia spathulifolia* (*omulavi*), which is used also by adults. The arrow shafts for children's bows are often made from small straight branches of *Terminalia prunoïdes* (*omunghama*).

The bows used by the men are stronger and, although sometimes constructed from larger palm-leaf petioles, are more commonly made from stems of *Acacia mellifera* (*omunghono*), *A. ataxacantha* (*omunghono* or *enghono*), or *Dicrostachys cinerea* (*ongete*). The arrow shafts are made from the thin straight stems of many different species of shrubs including *Clerodendrum glabrum* (*omululu*), *Grewia deserticola* (*omushe*), *G. falcistipula* (*omwila*), *G. flava* (*omuhonga*), *G. tenax* (*omuhonga*), and *Ochna pulchra* (*omuwe*). If wooden arrowheads are used (Fig. 13a), they are removable from the shaft and made from the wood of *Gardenia spathulifolia* (*omulavi*). The arrows are feathered with chicken or duck feathers (Loeb, 1962) tied on with sinews. Arrows employed in warfare or hunting bear iron arrowheads made by blacksmiths. Bruwer's description (1961) or arrowheads is as follows: "There are seven varieties of arrow points, two of wood, and five of metal. The wooden arrows are used for shooting birds. The one called *ekulu* has a blunt end, sometimes in the form of a carved knot, and the *endavi,* sometimes fashioned with little hooks, has a sharp point. The five metal arrow points are the *omuhongo,* a leaf-like flat one with both edges sharpened; the *eolongo,* similar to *omuhongo* but having hooks at the lower edges of the blade; the *ekeva* which is a half leaf-like point with a broad cutting edge in front; the *ehengo,* a thin needle-like arrow either round or with four corners; and the *ombutukuna,* which is similar to the *ehengo* but has a blunt point."

Arrow poison (*oudijo*) was still occasionally used at cattle outposts in the 1960s (Bruwer, 1961) but is no longer. The latex of *Adenium boehmianum* (*oudiyo*) was smeared on the arrowheads. Loeb (1956) stated that this was mixed with the fluid from the mouth of a chameleon (*efimbi*), which is regarded with great awe. These poisons work very slowly, so that once an animal is hit, it requires several hours for the poison to take effect. Bushmen may have influenced hunting practices, including the use of arrow poisons, among the Kwanyamas, since Bushmen were hunters and gatherers. They traded with the Ovambos and may have made bows and arrows in return for foods.

The arrow quiver (*onjua*) is made from calf or goat skin, with wild cotton fibers of *Gossypium herbaceum* var. *africanum* (*oshidudandiba*) placed inside to keep the feathers from being damaged. Loeb (1962) stated that quivers once were made also of calabashes, *Lagenaria siceraria.* Today some of the quivers have pieces of calabash in the bottom. Since there is now neither tribal warfare nor hunting for game in the Kwanyama area, few bows and arrows and quivers are to be seen.

Spears, called assegais in southern Africa but *eonga* in Kwanayama, were equally important in warfare with bows and arrows and were sometimes used for hunting wild pigs or other game. Bruwer (1961) stated that there was only one kind of spear and that it was used only for throwing, whereas Loeb (1962) remarked that there were two kinds. The shorter one had once had a solid iron shaft about 5 feet long to which a strip of ox hide was bound at the iron point (*efo,* sing., *omafo* pl.). The long one, on the other hand, had a wooden shaft made from *Diospyros mespiliformis* (*omwandi*) and a pointed iron spearhead with two sharp edges. Rawhide thongs were wrapped around the wooden shaft about halfway down the shaft and also at that place were tied some long hairs of the gnu or wildebeest (*omushila*) (Bruwer, 1961). He also stated that there were throwing spears.

The harpoon, although not a weapon of war,

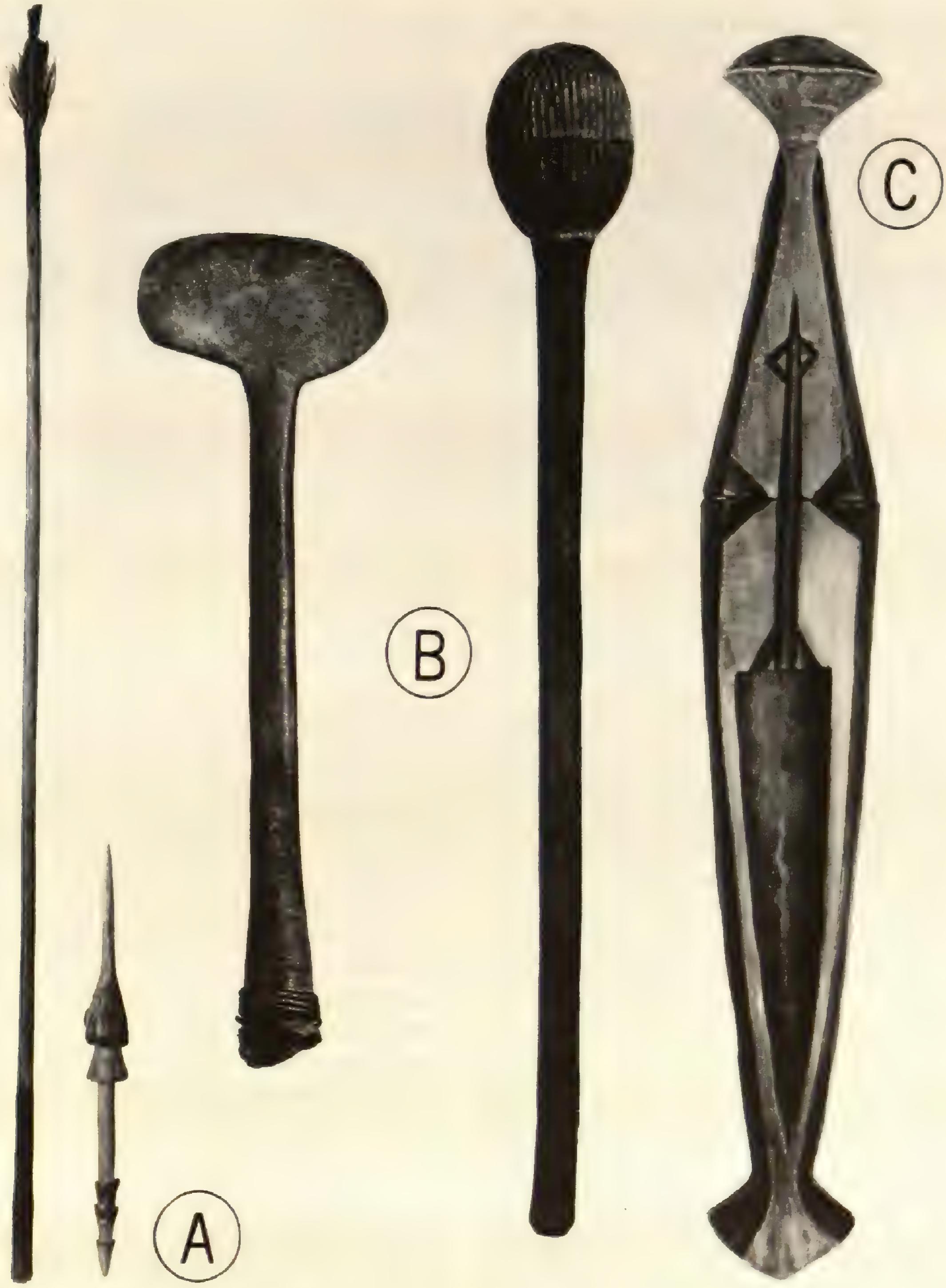

FIGURE 13. Kwanyama weapons.—A. Arrow with removable, barbed wooden head; shaft from *Grewia* sp., head from *Gardenia spatulifolia* or *Vangueria parvifolia*.—B. Knobkerries from heartwood of *Acacia* sp. or *Colophospermum mopane*.—C. Knife with carved wooden sheath and handle from *Berchemia discolor*; design burned on.

is very similar in structure to the spears with wooden shafts and barbed metal spearheads. The other end had a cord of palm leaves, *Hyphaene ventricosa* (*omulunga*), according to Loeb (1962), with a cork floater attached. Loeb claimed they were no longer used, and none were observed.

The knobkerrie or knob stick (*odibo*) was another weapon once carried into battle, where it was used for clubbing and throwing, but it now only serves for hunting small animals like hares. The stick is made from a solid piece of heartwood about 2 feet long with a special knob at one end

(Fig. 13b). Grooves may be carved on the knob parallel to long axis. Many herd boys today make simple knobkerries, very light in weight, with an irregular knob crudely carved but without grooves. The hardwoods used for knobkerries of the better quality include *Terminalia prunoïdes* (*omunghama*), *Euclea divinorum* (*omundime*), *Croton gratissimum* (*ombango*), *Colophospermum mopane* (*omufyati*), and *Acacia giraffae* (*omuonde*). Special knobkerries for such boys' ceremonies as puberty rites were made from *Berchemia discolor* (*omuve*) (Loeb, 1962). Knobkerries are also sometimes employed by adults for dancing. When used for hunting they are thrown with great accuracy. Walking sticks modeled on knobkerries but 3 to 3½ feet long are now carved from hardwoods. These are carried for support by the elderly or cripples.

Not only are knives and daggers useful as weapons and household utensils, but the carved wooden handles and sheaths are a unique artistic product. Knives (*ombele*, ex Tobias & Turvey, 1971) are 7 to 9 inches, daggers (*omukonda*, ex Tobias & Turvey, 1971) are larger, up to 30 inches long. They have the same general construction, possessing a double edged iron blade that was originally made by local blacksmiths with iron from Angola. They are now often made from old iron such as the spring leaf of an automobile. Knife handles and sheaths are carved from relatively hard woods (Fig. 13c) especially from *Berchemia discolor* (*omuve*), *Combretum engleri* (*omulondaxuxua*), *Dialium engleranum* (*omufimba*), *Diospyros mespiliformis* (*omwandi*), or *Pterocarpus angolensis* (*omuuva*). The handle is flared at the distal end, as is the bottom of the sheath, almost like the shape of a fish tail. Shaw (1938a), in a study of Ovambo knives, regarded this particular pattern as unique to the Ovambos and closely associated tribes. Knife sheaths have a raised projection on the back with a hole which allows the knife to be tied to the belt by a rawhide thong. Tönjes (1911) made the earliest observation of these knives: "The double-edged dagger, which is from eight to thirty inches long, is especially effective in hand-to-hand conflict. It is carried on a man's left side in a wooden sheath that hangs from his belt. The decoration of Ondonga dagger sheaths, which are often wound in copper wire, or covered with copper plate, is especially fine. In early times copper sheath daggers were displayed as a special token indicating the outpost huts of kings." Kwanyama tribesmen once had the identical decorations in copper, but these are now rare. Knives worn today usually have burned geometrical designs on the sheath, similar to those on cups. They may now also be worn on the right side, tied to the belt.

Loeb (1962) mentioned a large butcher knife (*ekatana*) in which the untanned scrotum of a bull or goat attached the handle to the blade. He said that, although these may sometimes have been used in fighting, they were utilized mostly for work around the kraal such as butchering and cutting down vegetation and cutting stakes for kraals, much as we would use a machete.

Wooden bellows (*omupepo*) used by the blacksmith are made by the wood carver in his forge (*eleva*). The bellow is made from the dolf tree, *Pterocarpus angolensis* (*omuuva*), using a natural crotch. The carver cuts a tubular hole through the stem as an air passage. There are two upward-facing openings covered with hides of the spring hare, *Pedetes caffer*, and two sticks are attached in the center. These are held vertically and pumped vigorously up and down by an apprentice to create the necessary draft. The bellow is partly embedded in the ground and a fire clay funnel 6 to 8 inches long is placed between the wooden bellows and the fire pit to prevent the bellows from burning. The best charcoal for the forge comes from *Burkea africana* (*omuntundungu*) or, if that is not available, from *Diospyros mespiliformis* (*omwandi*), according to Gabriel Hidengwa.

In addition to the forge, the blacksmith has these tools at his command: a sledge hammer (*ondjudo* or *ohamala*, the latter derived from the English for hammer), a round flat anvil (*oshilalo*) about 6 inches in diameter, and iron tongs (*onghuato*). These may now be purchased.

The blacksmith manufactures the following items: axe blades (*ekuva*), hoe blades (*etemo*), shaving blades (*oshimba*), knives and daggers (*omukonda*), spearheads (*oonga*), and arrowheads (*oikuti*). Woodcarving instruments are also produced (Bruwer, 1961), consisting of: chisels (*onisho*), iron bar to hollow out cups (*epanda*), bent iron scrapers to scrape out the inside of cups and buckets (*ongholola*), and iron blades used to burn decorations on wooden articles (*oshivauilifo*). He may make several sizes and types of needles (*enghumbo*) used in weaving baskets and mats, and nut picks necessitated by the hard-shelled seeds of marula, *Sclerocarya caffra* (*omuongo*), and manketti nuts, *Ricinodendron*

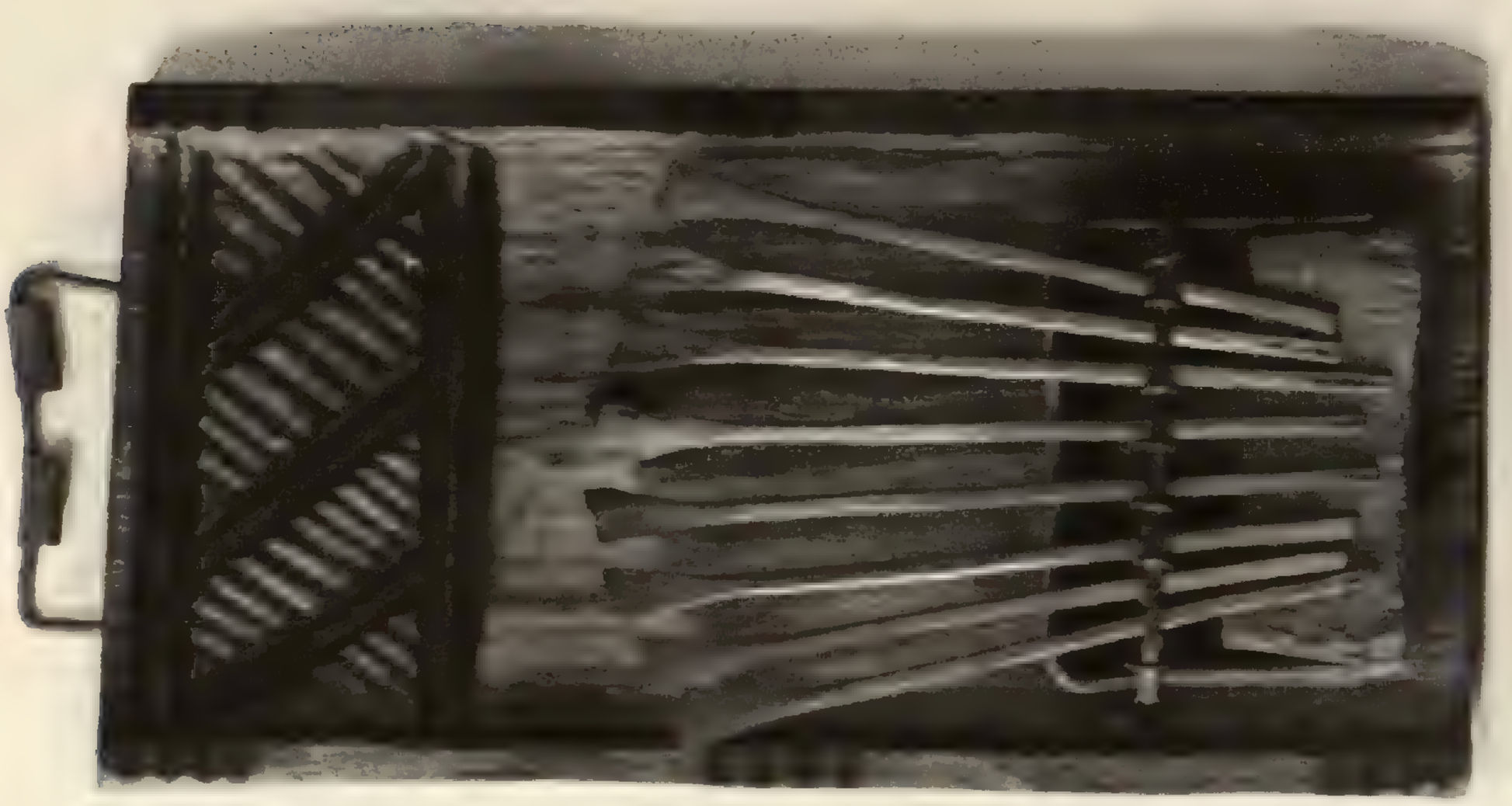

FIGURE 14. *Sanza* or Ovambo piano made from *Ricinodendron rautanenii* and Angolan iron worked by blacksmiths.

rautenenii (*omunghete*). They produce the iron keys (*omalimba*) of the Ovambo piano (*sanza*) (Fig. 14), and Loeb (1962) mentioned their manufacture of butcher knives (*ekatana*). The arm and leg bangles were once made from heavy iron or copper by blacksmiths. These, now rarely seen except for special dances, consisted of several types: *okavela* (bangles), *epili lokokuo* (leg bangles for women), *eengodo* (heavy copper ankle rings for women), and *oshikuata* (especially decorated arm bangles worn by men) (Tobias & Turvey, 1971).

Fuel and Fires

In ancient times the first wife maintained the sacred fire in each kraal, lit only from the king's sacred fire. This fire was never used to warm oneself nor for light or cooking. Actually it was only two smoldering green logs of *Colophospermum mopane* (*omufyati*), which would burn for several days before new fuel had to be added. Several other fires might be burning in a large kraal at night, for heat, for light, and one cooking fire to cook millet porridge, meat, or potherbs, etc. Many other kinds of wood are used for the other fires including dry *omufyati*, and very commonly the cooking fires are fueled with numerous fronds, especially petioles, and dried fruit stalks of the fan palm *Hyphaene ventricosa* (*omulunga*). Sometimes special fires were used with charcoal. This is true of the blacksmith. See above on the blacksmith for details.

Gathering of Foods

Although hunting antelope such as springbok, impala, and kudu was an important source of meat, game is now nearly extinct in the Kwanyama area except for wild hares, especially the spring hare (*Pedetes caffer*). Herdboys may hunt these with bows and arrows, especially while hearding cattle away from home. Some traps are also set for hares by the boys.

Fishing is an important seasonal occupation, especially after the heavy flooding of the Kunene River, which brings down thousands of fish. Some of the traps used have already been discussed. Leaves, twigs, and bark of *Spirostachys africana* (*omuhongo*) are sometimes crushed and put into pools at the end of the season as a fish poison.

During the rainy season frogs (*omafuma*) are caught along the *oshanas* and are considered a delicacy. After a rain or even sometimes during a heavy shower myriads of "flying ants" or termites (*eefa*) can be caught and have a high nu-

trient value. Another delicacy that is eaten roasted is large fat green hairy caterpillars 2 or 3 inches long. One day a girl about 12 was showing me a tree for which I had only a Kwanyama name. She found the tree and soon discovered several dozen large caterpillars in a tree. She stripped some bark from a nearby *omufyati* tree and strung the caterpillars on it, carrying them joyously home with her.

The Kwanyamas collect wild honey and know how to protect themselves from getting stung by rubbing the leaves of *Rhus tenuinervis* (*omupombo*) on their skin. The stems of this *Rhus* are also burned, and the smoke is allowed to drive bees from the nest when the honey is taken. Some bees form hives only in hollow trees, but some stingless bees form nests in the ground.

Other foods used are cultivated crops, normally grown during the rainy season, fruits and seeds, and some greens and tuberous or root plants gathered from the wild. Many are dried to be preserved for the dry season.

Cultivated Plants

Of the plants cultivated, those which are indigenous to Africa include: millet, *Pennisetum typhoïdes* (*omahangu*), the most important staple; Kaffir corn or milo maize, *Sorghum caffrorum* (*olulyavala*); warty gourd, *Lagenaria siceraria* (*oshitila*); pumpkin, *Cucurbita moschata* (*enyangwa*); melons, *Kedrostris hirtella* (*okatanga kamufifi*), *Cucumis africanus* (*etanga*), and watermelon, *Citrullus lanatus* (*domaliua*); Ovambo beans or black-eye peas, *Vigna unguiculata* (*omakunde*); and groundnuts, *Voandzeia subterranea* (*efukwa*). The non-bitter warty gourd mentioned, although of the same botanical species as bottle gourds and giant calabashes, is the only form eaten.

Regularly cultivated exotics include: corn or mealies, *Zea mays* (*epungu*), used only to a slight degree; peanuts, *Arachis hypogaea* (*eembudufukwa*); manioc or cassava, *Manihot esculenta* (*emudika*); and sweet potato, *Ipomoea batata* (*oshikapa*). Very little *Manihot* is grown because there is insufficient water in the long dry season, and there is no water supply for irrigation. It is grown among Ovambos in larger quantities further north in Angola where water is more plentiful. Among the introduced fruit trees are: guava, *Psidium guajava* (*omungwaava*); lime, *Citrus aurantifolia* (*omungongo*); and sour orange, *Citrus aurantium*. The mulberry, *Morus nigra*, is only rarely seen and has no Kwanyama name. These trees are usually protected from cattle and goats by fences of cut thorn bushes. They require some hand irrigation when they are very small.

Wild Plants

So many kinds of fruits are gathered wild and eaten either fresh or dried or both, that the reader is referred to the Appendix.

Only three of the principal species are eaten raw only: marula, *Sclerocarya caffra* (*omuongo*), *Strychnos cocculoïdes* (*omuuni*), and *S. pungens* (*omupwaka*).

One nutritionally important food which has been ignored largely by non-resident writers is spinach or potherbs (*ombidi*). These are commonly eaten boiled with or without salt as a relish (*oshivelelua*) and are usually eaten with millet porridge as part of the main meal of the day and provide an important source of vitamins and iron in the diet. Greens are boiled and eaten in large quantities during the rainy season when they are abundant volunteers in cultivated fields. The flowers of *Aloë esculenta* (*ekundu*) are boiled in a like manner. Extra greens and flowers are boiled and pressed into flat cakes about 6 inches in diameter, then sun dried on the roof (Fig. 15). In wet weather they may be dried very slowly over a charcoal fire in the covered cooking area. These cakes, called *omavanda* (only the plural form of *evanda* is used) and "cabbages" in English by my informants, are then stored for use in the dry season when they are soaked in water, reboiled and eaten with salt. Greens are sometimes mixed with other foods to form a special dish (*eta-pati*).

A wide variety of wild bulbs, tubers, corms, and other subterranean plant organs, many of them probably used by Bushmen before the arrival of the Ovambos, are dug for food. Some, like the rhizome of the water lily, *Nymphaea capensis* (*edol*), the corms of *Isoëtes* sp. (*endavo*), and members of the iris family (Iridaceae) are obtained during or immediately following the rainy season. (See Story, 1958, for Bushman foods.) For species of corms, roots, etc. eaten by Ovambos see Appendix.

Capsicum anuum and *C. frutescens* (both *ondungu*) are now grown in a few kraals for seasoning. They are added to cooking meats or vegetables. Bark of *Combretum psidioïdes* (*omalo*)

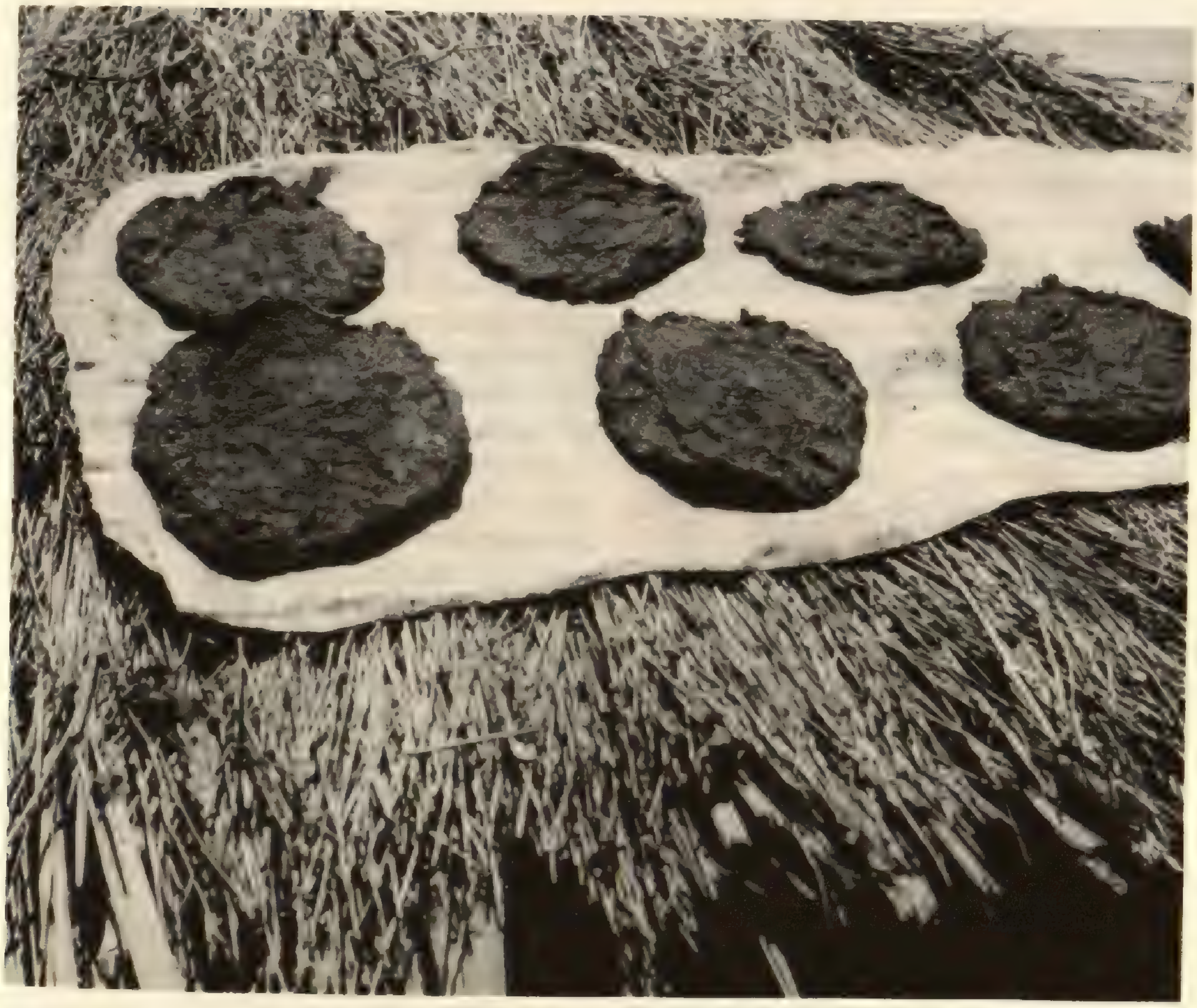

FIGURE 15. *Omavanda*, dried potherbs called "cabbages," kept for the dry season when no greens are available, then soaked, boiled and eaten with salt. Leaves of *Vigna unguiculata* and leaves and twigs of *Cyandropsis gynandra* are among the most common plants used.

and leaves and stems of the mint, *Ocimum canum* (*endjikaui*), are used to flavor wine and meats respectively.

A list of plants used as food for domesticated animals and turtles is given in the Appendix.

Preparation of Food

In monogamous families all foods are prepared in the kraal by the owner's wife or more mature daughters. In polygynous families, as Loeb (1962) has pointed out, the duties of wives are divided under the supervision of the first wife.

Food is cooked in the open, the cooking pot being propped up by several broken clay pots in the absence of rocks or by special clay props. Clay pots are commonly used for cooking, but nearly every kraal now has one iron pot. Often cooking is done in some type of a shelter. A shelter from the sun, covered with a few old millet or sorghum stalks is called *vikilila*. A shelter from the rain in the form of a conical thatched roof with no vent at the top is called a *jaama*. Various utensils such as beer containers, brushes, brooms, stirring sticks, and various gourds are hung on the shelter or kept on the clean sand inside. Nearby is a pantry (*elimba*) in which additional utensils and containers of seeds and minor food supplies are stored. Beans, groundnuts, marula nuts, watermelon or squash seeds, etc. are stored there in large baskets or clay pots.

In the largely monogamous society the wife, assisted by her daughters or now also her sons, makes butter in large calabash gourds used as churns. It takes more than one hour of swinging these big churns back and forth to make butter. When available, *Euphorbia montieri* (*omupindinanguali*), a small herb, is crushed and added to the milk before the churning and is said to increase the butter content. Buttermilk is highly

prized and often is carried into the fields in gourds for the mid-morning or mid-afternoon refreshment of those working there. One favorite food is made by adding finely ground millet flour, *Pennisetum typhoïdes* (*omahangu*), to buttermilk.

Milk is frequently curdled (*omaofi*) by adding the crushed roots of *Nymania capensis* (*omunghidi*) (given by LeRoux, 1971, as *Boscia albitruncata*). The roots appear to have an enzyme with rennin-like qualities. See the Appendix for other special foods.

Beverages

The Ovambos prepare several fermented alcoholic beverages which are often an important part of their diet and culture. These consist of Kaffir beer (*omalodu*), the most important; rough beer (*oshikundu*), a lighter beer; an even lighter beer called *omanyeu*; wine of various fruits (*omavinju*); brandy (*olambika*); mead (*lafaula*); and a palm wine (*omavinju*).

The favorite drink is Kaffir beer (*omaladu*) which in many kraals is brewed daily. It was essential in polygynous households that the first wife always had some beer on hand. These people understand and follow a rather complicated malting process in making their beer, in use for hundreds of years before Europeans entered the area, one of the evidences that a so-called primitive people are really not so, as has been pointed out so lucidly by Levi-Strauss (1966). *Omaladu* is essential for all feasts and ceremonies, and frequently guests will bring pots of beer to ensure sufficient quantity. Because of its low alcoholic content and because so much fine flour remains in suspension, their beer is very nutritious and an important dietary component.

In 1947 my informants reported Kaffir corn or milo maize, *Sorghum caffrorum* (*oilyavala*), to be the preferred grain for this beer. Now, however, millet, *Pennisetum typhoïdes* (*omahangu*), is often preferred for beer making. Both are still used, but it is my understanding that when grain is in short supply, *oilyavala* is used almost entirely for brewing. The processes for making the various beers are described under *Pennisetum typhoïdes* (*omahangu*).

Wine (*omavinju*, only plural form used) is made from a wide variety of wild fruits of trees and shrubs. Those fresh or dried fruits from which a wine is made include the following: *Vangueria infausta* (*omubu*), *V. parvifolia* (*omumbu*), *Grewia avellana* (*omukopakopa*), *G. deserticola* (*omushe*), *G. falcistipula* (*omwila*), *G. flava* (*omahonga*), *Ficus petersii* (*omungholyo*), *F. sycomorus* (*omukwiyu*), *Zizyphus mucronata* (*omukekete*), *Diospyros lycioïdes* (*oshimumu*), *D. mespiliformis* (*omwandi*), *Euclea divinorum* (*omundime*), *Pseudolachnostylis maprouneifolia* (*omuliambabi*), *Berchemia discolor* (*omuve*), *Hyphaene ventricosa* (*omulunga*), *Sclerocarya caffra* (*omuongo*), *Strychnos cocculoïdes* (*omunya*), and *S. spinosa* (*omuuni*). Bark of *Burkea africana* (*omutundungu*) may be crushed and added to a batch of wine to improve its flavor. In nearly all instances the fruit is mashed up in a large clay jar and allowed to ferment with wild yeasts. The juice is strained after bubbling fermentation stops and drunk almost immediately.

The only really popular and universally drunk wine is that made from the fruit of *Sclerocarya caffra* (tree: *omuongo*, fruit: *omoongo*), a relative of the mango. The fruit, which is about 1½ inches in diameter, of rather irregular shape and orange color, has a leathery skin. It falls to the ground when fully ripe and can lie there for several weeks without spoiling. It may be eaten raw and, although sweet, retains a slight tartness.

Making wine is a communal project, where women from several kraals, along with their infant children, gather under one big tree and bring all the fruit on the ground into the central area. They have one or more large clay pots. The women have a small horn tool, rather sharp-pointed, that they hold in one hand and use to puncture the leathery skin of the fruit. With the other hand they squeeze out the juice into a small woven basket holding perhaps 2 or 3 cups of the liquid. When this basket is partly filled the woman dumps it into the large clay pot. The fruit skins are put into a pile to discard, and the seeds are put into a separate clay pot to be dried in the kraal and later split open for their valuable marula nuts. Six or eight women and their children will sit and talk and sing joyously and laugh while they squeeze out the juice. The large clay jar is used over and over for making wine, so it has a residue of yeast which causes fermentation to begin immediately. Some of the wine may be drunk that night, or used the next day. In a day or so it can become alcoholic enough to cause intoxication. It is served in smaller carved wooden cups than beer cups and has a pleasant sweet taste when not too old.

Ovamboland celebrates the "Month of the Marula" when these fruits are ripe. Although most businesses and field work go on as usual, it is a

time of great festivity. I saw very few inebriated people. The month is unusual because there is a moratorium on crime! No one steals or is supposed to fight, and no court sessions are held before headmen. No one makes complaints if his neighbor's cattle accidentally get into his millet field. It is a remarkable event, and we heard of no disturbances during the whole month.

The most intoxicating beverage made by the Kwanyamas is brandy (*olambika*), which is fermented like wine and then distilled, using any of the fruits listed under wines. I observed the making of *olambika* as follows. In a special hut a woman prepared a mash consisting of fresh fruits of *Berchemia discolor* (trees: *omuve*, fruit: *eembe*, only plural form used). The fruit had been covered with water in a large clay pot, mashed, and allowed to ferment for five days or until bubbling had ceased. A clay pot of about 2 gallon capacity was propped in the center of the hut on three broken pots, and a fire was built under it. Its special kiln-clay cover was notched at one side where a pipe could be inserted. A mortar-like clay mixture was smeared around the cover to seal the pot, forcing all the steam out the pipe. The pipe tilted slightly downward and passed through a wooden trough (*okanjome*) carved from a single tree trunk. The pipe was about 4 feet long and the trough nearly 3 feet. It required nearly two bucketfuls, or about 2 gallons, of cold water to fill the trough, and the water had to be changed for each batch of brandy. A string placed at the lower end of the pipe, led into an old wine bottle, in which the distillate was collected. About one-fifth quart of *olambika* is produced from each batch of mash. My informant stated he did not drink the brandy, which is a clear liquid resembling gin in appearance, because it was too strong.

Loeb (1962) made only brief mention of *olambika*, and he believed it was made commonly from the marula fruit. Bruwer (1961) stated that it provides extra income for women who make it. He also stated that there is a tribal law that prevents men from carrying daggers during the "Month of the Marula," but I did not hear this mentioned. Small amounts of bottled beer, wine, and brandy were imported or smuggled from the Portuguese in Angola in 1973.

Bruwer (1961) discussed a drink called *kari*, sometimes brewed from peas and sugar, that is apparently intoxicating, but I did not hear it mentioned.

Palm wine was formerly made by cutting the terminal bud of the fan palm tree, *Hyphaene ventricosa* (*omalunga*). However, since excision of the bud kills these valuable trees, the practice has long been forbidden, and palm wine is no longer made by the Ovambos, but is common in some other parts of southern Africa.

Mead was once fermented from honey and water, but honey is prized so highly as food, and beer and marula wine are so popular, that mead is apparently no longer made.

A number of fruits used for wine are squeezed, mixed with water, and drunk as unfermented beverages. Citrus trees, such as lemons, limes, and oranges, have been introduced in recent years. The juice of these fruits is squeezed, mixed with water, and drunk.

Milk and buttermilk are the only other beverages commonly observed. See the section on foods for buttermilk processing.

Poisons

There are poisons and some antidotes long known by the Kwanyamas. A few poisons might be termed external irritants such as *Tragia okanyua* (*okalilifa*), which has stinging hairs on its leaves and stems, or the sap from *Spirostachys africana* (*omuhongo*), which is extremely irritating to the mucous membranes of the eyes and exposed areas. The latter may cause temporary blindness and is counteracted with sour milk. This same plant was used "medicinally" in enemas for children and has caused many deaths, as have *Ricinodendron rautanenii* (*omunghete*) and *Gardenia spatulifolia* (*omalavi*).

Several plants are known as poisons if taken internally, either accidentally or given maliciously. These include the *omuhongo* (above); the seeds of castor bean, *Ricinus communis* (*olumono*); chewed seeds of *Abrus precatorius* (*omukene*); seeds of *Entandrophragma spicatum* (*omutaku*); most parts of *Datura innoxia* (*emumu*); *Trachyandra arvensis* (*enjanga*); and others.

Poisons were used in hunting and fishing. Arrow poison was made from *Adenium boehmianum* (*oudiyo*) and *Euphorbia striata*. Antidotes for arrow poison included chewed roots of *Grewia avellana* (*omukopakopa*) and *G. deserticola* (*omushe*) spit on the wound. *Omuhongo* is crushed and used as a fish poison in *oshanas*.

Several trees produced edible gums, but gums of other species were sometimes eaten mistakenly and were poisonous. The poisonous species include *Albizia versicolor* (*omusheshe*) (cited by

Loeb et al., 1956, as *omupako* which is *Erythrophleum africanum*), and *Peltophorum africanum* (*omupala*). *Ombutu*, an unidentified plant, is said by Loeb et al. (1956) to be an antidote for these poisons.

Some plants are known to be toxic to cattle including *Datura innoxia* (*emumu*) and *Indigofera astragalina* (*okambadanga*), the latter by Loeb et al. (1956).

Cosmetics

The most common cosmetic is red ochre mixed with butter or a vegetable fat or oil. Red ochre is obtained from *Pterocarpus angolensis* (*omuuva*) by pounding the heartwood of the roots to a powder and extracting the dye. Vegetable oil is obtained from seeds of a large number of plants including: *Ricinodendron rautanenii* (*omunghete*), *Sclerocarya caffra* (*omuongo*), *Citrullus ecirrhosus* (*enuua*), *C. lanatus* (*domaliua*), and others listed in the Appendix.

This mixture was stored in carved wooden bowls with lids, in the hard outer covering from the fruit of *Strychnos* spp., or small gourds, *Lagenaria siceraria* (*oshitila*). In traditional dress women wore short aprons in front and back, with ostrich egg shells and other decorations on their clothing. Most of the remainder of their bodies were covered with red ochre and oil for ornamentation and perhaps to keep off insects and keep the skin from drying in the hot season. Most women are now Christians, wearing dresses and no longer using red ochre. The leaves of *Ocimum simile* (*embodi lomomadi*) may be dried, ground with the mortar and pestle, and added to the red ochre mixture to give it a pleasant scent.

Body powders, similar to talcum powder in European cultures, are made by drying and grinding to a powder the leaves and young twigs of *Hemizygia bractosa* (*oshive*) or flowers of *Croton gratissimus* (*obango*). These pleasantly scented powders are then rubbed on the body as deodorants.

Sesbania microphylla (*ombudjembudje*) is one plant whose seeds are crushed and used to produce a sudsy soap for cleaning the skin. Coarse siftings of bran from ground *Pennisetum typhoïdes* (*omahangu*) are also used for cleaning off old oil from red ochre.

Medicines and Magic

In his studies on primitive concepts of disease, Clements (1932) distinguished five different causes attributed to illness by primitive peoples of the world:

(1) Sorcery—all those theories attributed to the manipulations of persons skilled in magic or having some control over the supernatural.

(2) Breach of taboo—all those theories which explain illness as punishment for breaking social prohibitions having divine sanction.

(3) Disease-object intrusion—all theories attributing disease to the intrusion of some tangible foreign substance into the body such as a bit of bone, hair, a pebble, wood splinter, or a small animal such as a lizard, worm, or insect.

(4) Spirit intrusion—a class which includes all etiologies which state that disease is due to the presence in the body of evil spirits, ghosts, or demons.

(5) Soul loss—this attributes illness to the loss of the soul, which may have been extracted by ghosts or sorcerers, or the soul may leave the body at night and not return before the person awakes. Death will result, if the soul does not return.

Table 1 of Clements' paper listed a total of 269 tribes or ethnic groups on all continents in which primitive concepts of disease had been studied. Of these only one tribe each in Peru, Borneo, New Zealand, and only one tribe in the Sudan and the Baganda of Uganda among the 38 African tribal groups mentioned are claimed to explain disease by the application of all five concepts. No tribes from South West Africa were mentioned except the non-Bantu Hottentots, and today they are all considered to be "colored" or mixed with European blood. Loeb (1955a–c) stated that all five concepts were applied among the Kwanyama and that plant materials were often used in connection with performing magic or treating illness.

There are four classes of native doctors (*ondudu*) (Loeb, 1962) among the Kwanyamas. The lowest class consists of herbalists. It also includes female diagnosticians and midwives (*osimbada*) and all homosexuals (*essenge*). Women cannot advance beyond this level, but the homosexual men may advance to the other three classes. Only this first class does not involve possession of ancestral spirits by the curer.

The second class cures by means of sacrifice and exorcism and is able to detect witches.

The third class of doctors has gained additional magical powers and is able to expose thieves and find lost articles. He performs purification rites and magic to cure snake bites.

The fourth and highest class comprises the master doctors, who become the doctor-teachers (*omupuliki*). They teach and initiate all other grades, manufacture amulets, and are the supreme authority in all matters of religion, medicine, and ceremony. War leaders (*ondjai*) were selected from this group. Secret initiation rites after an extended apprenticeship involved the upper three classes.

According to Loeb (1955a–c) and Bruwer (1961), the higher grade doctors are referred to as "Witch doctors" (not to be confused with witches). They were called *omupuliki* and were greatly respected. They were the only men who carried no weapons but carried an herb basket (*onghinda*).

According to Loeb (1955a–c) sometimes animal sacrifices are required, but often plants are used for medical treatment. If a doctor diagnoses a person as being possessed with the "spirits of the wild cabbage" (*evanda*), the people get a cabbage cake, cook it, and rub the patient with it as the doctor prays. For some diseases the doctor will fumigate the patient with smoke of herbs. Herbalists of the lower classes use many teas, enemas, and external poultices.

There is a fine line between those herbs which are employed for healing and those which are related to magic. Very little scientific information is available as to which medicines possess active ingredients that have healing potential. The best source of information is the remarkable book on medicinal and poisonous plants by Watt and Breyer-Brandwijk (1962) in which a biochemical analysis of a great many species is given, and their relation to the biochemistry is discussed. Unfortunately many plants from Ovamboland are not listed in it.

Magic plants are summarized in the Appendix of this work and other details included in the writeup of individual species. These belong to a number of categories such as: taboos, keeping away evil spirits or such undesirable animals as snakes or insects, or protection from lightning. Others pertain to hunting or warfare, purification rites, or promotion of fertility.

In contrast to these are the allegedly medicinal plants that are applied as remedies for specifically identifiable illnesses. Some of the plants used may have no real medicinal value, or their value may be more psychosomatic than truly medicinal. However, many of these medicines have been used for centuries among the Kwanyama people, and some of them through trial and error have been found to have true medicinal value.

Watt and Breyer-Brandwijk (1962), for example, have verified that bark of *Albizia anthelmintica* (*omuhanguti*) has proved to have anthelmintic value and is used also in Angola, Tanzania, and other parts of South West Africa. The standard treatment for burns in Ovamboland is application of juice from leaves of *Aloë esculenta* (*endobo*). Although this species has not been investigated, other species of *Aloë* have been found to be more effective for burns than any other medicine.

On the other hand plants such as some of the Tiliaceae, i.e. *Corchorus tridens* (*okalyoaipute*), *Grewia avellana* (*omukopakopa*), and *G. deserticola* (*omushe*), are claimed to prevent death from wounds made by poisoned arrows. No investigations on these plants are reported in Watt and Breyer-Brandwijk (1962), but they do report that other species of both genera have been employed medicinally. No other tribes use them as antidote for poisons, and some doubt remains as to their reliability.

Relief for snakebite is attributed to *Acacia mellifera* subsp. *detinens* (*okadilanghono*), *Aptosimum* sp. (*oshikanda shefuma*), and *Oxygonum alatum* (*oshikanda*) (Loeb et al., 1956). How these are applied is not known. This *Acacia* is not used medicinally by any other tribes in southern Africa, and although the other genera have been used medicinally by some tribes, they are never used for snakebite. Their use is questioned.

Zizyphus mucronata (*omukekete*) is widely distributed throughout southern Africa and is reported (Watt & Breyer-Brandwijk, 1962) to be used for many illnesses by different tribes. The berries are also roasted and ground as a coffee substitute in some areas. The only active ingredient that has been identified is tannin, so its potential as a medicinal plant is not fully understood. Among the Kwanyamas a tea made from leaves is used for diarrhea and for malaria; a tea from the roots is used for a pain in the side. Details of all treatments available are listed in the taxonomic section and a summary of medicines is in the Appendix.

The Kwanyamas have identified a remarkably large number of diseases compared to some cultures and credit cures or relief with herbs for many categories of illness. Investigation should be made of the possible medicinal value of these plants, and their pharmacodynamics should be tested.

In 1947 native doctors were still actively practicing their art, but by 1973 only one of the higher categories was reported, isolated in an area I did not visit. There are still a few herbalists, the lowest category of doctor, who use plant materials without magic. In my extensive visits to kraals it was evident that women there have a considerable knowledge of medicinal plants for such common ailments as cuts, wounds, sores, headaches, stomachaches, earaches, diarrhea, fevers, skin disorders, and others. The more seriously ill people now seek medical attention from the various mission hospitals, given financial assistance by the government, or go to the larger 500-bed government hospital in Oshikati.

Narcotics

Tobacco was evidently first introduced into Ovamboland by Portuguese traders from the north, perhaps as early as the sixteenth century. Today one sees a few tobacco plants in many kraals, but hardly enough to supply the needs of regular smokers. Tobacco, *Nicotiana tabacum* (*omakaya*), is grown in larger quantities by the Kwanyamas living a few miles north in Angola, and some of it is sold in Ovamboland in tightly coiled rings. Most tobacco can be purchased in numerous small shops, supplied from South Africa.

The principal use of tobacco is for pipe smoking by both men and women. Often pipes have very short stems. Although more popular at one time, snuff is not used much today. Snuff was prepared from cut and ground tobacco leaves and ash from the pod of *Entandrophragma spicatum* (*omutaku*). The latter was pounded very finely in a small calabash mortar with a pestle. Shaw (1935a, b, 1938b) gave an account of equipment and the use of tobacco and hemp or marijuana, *Cannabis sativa* (*epangue*). South Africans usually call it *dagga*. Shaw believed that *dagga* was introduced into South Africa by Arab traders on the east coast much earlier than tobacco, and that it spread across the southern part of the continent. Vedder (1938) discusses the use of *dagga* in several sections of his book. The following quotations and information come from his work.

A number of German Lutheran missionaries in the first half of the nineteenth century noted the growing and use of *dagga* in South West Africa (Vedder, 1938). Albrecht, who had established his mission station at Warmbad, wrote in 1806: "The only plant which has been cultivated by the natives in South West Africa to that time was *dagga*, which was smoked on account of its intoxicating effect. The cultivation of tobacco, which ought really to have been a much better proposition was taken up very gradually."

In the late 1820s the Bergdamas carried on a regular trade with the Ovambo tribes, bartering with *dagga* for cows, goats, iron, and copper. The account continues: "They grew this strong, intoxicating herb which could be smoked and worked into cakes and used in this form as a medium of exchange."

Kolb wrote from Walfish Bay area in 1848: "No trace is found among them of any ancient heathen religion. It is true that they talk about evil spirits, but they know no higher being than tobacco, i.e., *dagga*. Tobacco is their god and their heaven. The man who has plenty of tobacco is, in their estimation the wealthiest and luckiest person on earth."

Another missionary living in South West Africa, writing about the 1850s, stated: "Alcohol in the form of honey-and-sugar-beer (which we call mead), and the more expensive luxury, brandy, was a great obstacle to the progress of civilization and there is no need to waste words about it, and the smoking of *dagga* can be placed in exactly the same category. It is hardly possible to form any conception today how universal the craving for *dagga* was amongst the Bergdamas, Namas and Saan (Bushmen). It brought many to financial ruin, for *dagga* was expensive and had to be paid for with stock. Beside this, it undermined the whole physical system and many people lost their reason through its poisonous effects. Hugo Hahn (who first entered Ovamboland) took up the fight against *dagga* with an almost excessive zeal."

The account continues with details of his systematic removal of every living *dagga* plant he could locate, usually with the owner's permission, but not always. He destroyed *dagga* worth 100 sheep and angered some of the natives. The Bergdamas were the chief growers of *dagga* and carried on an active trade as far as Ovamboland.

From these accounts it appears that *dagga* once had considerable influence, but it has been outlawed in South West Africa for many years, and I can confirm my informants' information that it is no longer grown or used there.

Leonotis leptifolia (*etilovalodi*), called wild *dagga* in South Africa, is smoked as a substitute for *dagga* in South Africa (Watt & Breyer-Brandwijk, 1962), and although collected in Ovam-

boland, I found no evidence of its use among the Kwanyamas.

Musical Instruments

Africans have long enjoyed music and dancing, because they love the rhythm from drums and other instruments. They developed many folk songs portraying life in their culture to accompany such rhythms. The playing of their instruments does not involve the high degree of skills found in much more advanced societies, as in India, Japan or China. Simple instruments like the one-stringed *okambulumbumbua* are similar to instruments found in many parts of southern Africa and on other continents, and the same may be said of some of the drums, rattles, flutes, etc.

The drums (*ongoma*), which already have been discussed, are carved from logs of *Ricinodendron rautanenii* (*omunghete*). The larger sized ones are used for celebrations, for initiation rites, puberty rites, and sometimes to welcome important guests to the kraal. They were beaten in former times if a man were killed by a lion. The smaller drum was beaten when the king ascended the throne in olden times (Loeb, 1962), and with a staccato beat when the king died.

The *okambulumbumbua*, a simple but popular one-stringed instrument, sometimes called a "musical bow," is made from the wood of *Spirostachys africana* (*omuhongo*) with a sinew for a bow string, and a medium-sized gourd (*Lagenaria siceraria*), with the opening away from the bow, as a resonating box. It is played by striking the string with a stalk of the grass *Eragrostis pallens* (*omaoloolo*). Three or four different notes can be played on the instrument, and rhythm can be varied greatly. Although the sound is not very loud, it carries several kraals away, especially in the quiet of the twilight (Fig. 16).

A relatively distinctive instrument is the *sansa* (or *sanza*) or Ovambo piano. The Ovambos were one of the few tribes in South West Africa with the necessary blacksmiths to make the iron keys (Fig. 14), but the same general type of instrument is known in Zambia and parts of South Africa. This may be a very ancient instrument which the Ovambos brought with them on their migration to this area in the sixteenth century. The instrument is made from a flat carved piece of wood of *Pterocarpus angolensis* (*omuva*) from which about eight iron keys are rigidly suspended, tuned by the blacksmith who makes them. They are played by springing the keys and letting them vibrate freely; different rhythms and simple tunes can be produced.

FIGURE 16. The *okanbulumbumbua*, a one-stringed instrument with a gourd resonating box, being played by a Bushman servant of a Kwanyama headman.

Horns are made from several different kinds of antlers and horns of animals, the largest from the kudu, others from horns of cattle or antelope. Horns were blown for rites and ceremonies and to encourage men in battle (Loeb, 1962).

Bark whistles were mentioned by Loeb (1962) as having been used for the cattle ceremony and in puberty rites, but I neither saw nor heard any.

A flute (*ongalilo*) is made from the cane-like stems of *Phragmites australis* (*eembungu*, only the plural form is used). The nodal septa are removed by burning or pushing them out with a long slender stem. Only a single septum is permitted to remain at the end near the hole through which the player blows air. A number of holes are then cut in the reed so that a few notes may be played. Herd boys often play flutes while herding cattle.

Gourd rattles are sometimes used, together with drums for dancing and in the past were employed by native doctors in their magic removal of poisons. These gourd rattles are made from small-sized fruits of *Lagenaria siceraria* into which the seeds of a small leguminous vine, *Abrus precatorius* (*onghenanghena*), have been placed to produce a rattle when shaken.

A calabash drum (*ekola*), described by Kirby (1942) as first observed along the Angolan border among these people in the seventeenth century, makes a rasping sound somewhat resembling the call of a crow (*ekola*). This instrument was normally played by male homosexuals (*essenge*), but female doctors were also allowed to play it when treating insane patients. These drums, known only among the Kwanyama people, are either rare or no longer in use. One is on display in the Windhoek museum. The instrument is made with two or occasionally as many as four gourds to which a notched stick is attached. Another stick is rubbed across the notches to produce the raspy sound.

Ankle rattles have been used in the past, especially during girls' puberty rites (*efundula*) and other festive occasions. Loeb (1962) stated they were attached to the ankles of children beginning to walk. They were probably first used by Bushmen but are now common through South Africa. Some ankle rattles are made from the cocoons of wild silkworms and filled with small pebbles. Others, according to Loeb, are made from dried pods of *Spirostachys africana* (*omuhongo*). I did not see any of these rattles, since the appropriate ceremonies have practically been discontinued.

Some Ovambos have learned to play European instruments such as the clarinet and guitar, and many Africans hear such music on the FM radio station in Ovamboland. Reed organs are used in churches to accompany singing. Rarely instruments such as the accordion-like concertina are observed in crowded beer halls where there is singing and dancing to modern music.

FIGURE 17. Traditional Kwanyama bride's costume. Palm fibers from *Hyphaene ventricosa* are used as frame for hair, body covered with red ochre mixed with vegetable oil stamped from seeds.

Dyes

The most significant dyes used today among the Kwanyama are for dyeing palm fibers for baskets. The most common color used is dark brown obtained from the bark of bird plum or wilde dadel, *Berchemia discolor* (*omuuve*). This is a very permanent dye, presumed to be composed basically of tannins. Sometimes the fruit of the same tree (*eembe*, only plural form is used) is used for an orange dye. The brown dye is obtained by crushing the bark, boiling it with palm leaf strips, and allowing the mixture to stand for one to several days to produce the dark brown dye. The orange is produced from the fruit by the same method. The heartwood of roots of *Pterocarpus angolensis* (*omuuva*) is pounded and soaked to get a reddish dye. When used on baskets it becomes a deep brownish red. But more commonly the dye is mixed with oil for a cosmetic pomade. This oil mixture is not only put on the hair and skin, but is used for dyeing leather or cow stomachs, used for clothing by men and women in an earlier period. Red dye for leather was also obtained by women from *Elephantorrhiza suffruticosa* (*omubalandongo*) and *Entada*

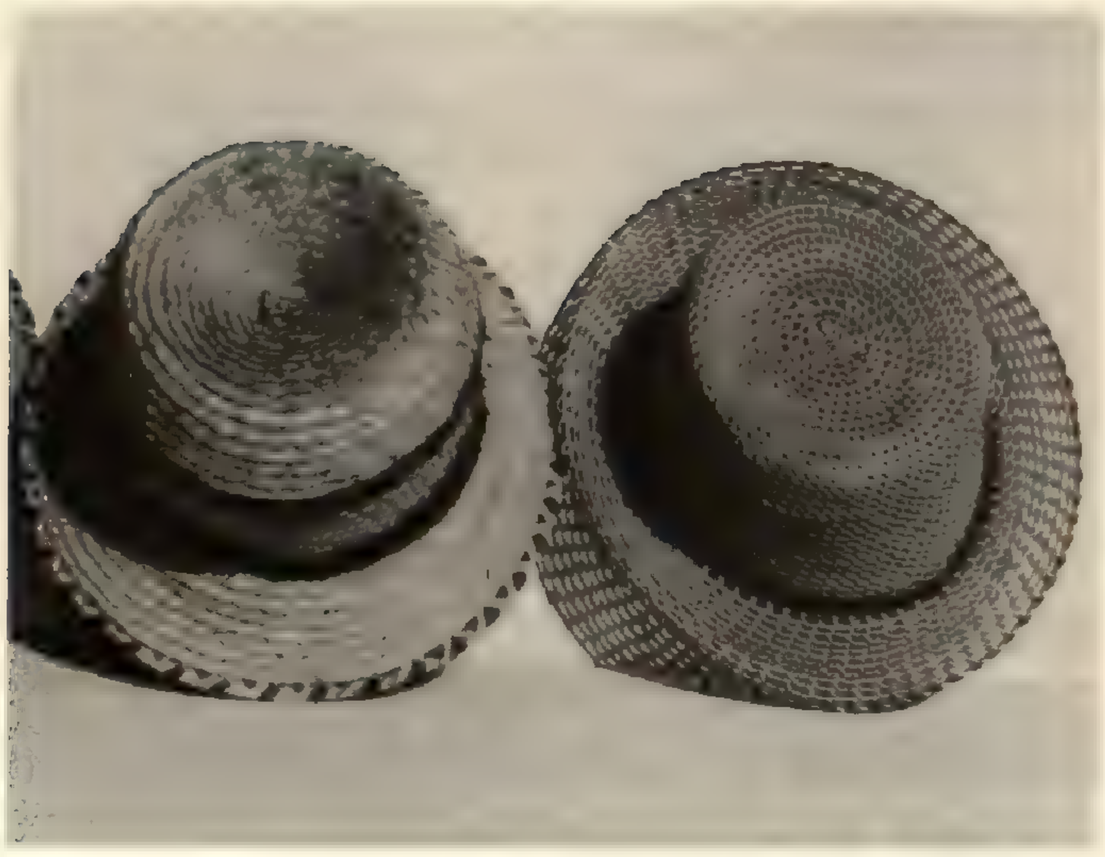

FIGURE 18. Modern style hats woven from leaves of the palm, *Hyphaene ventricosa*.

arenaria (*omubalandongo*). The fruits of *Euclea divinorum* (*omudime*) are sometimes used as a purple dye for basket fibers, but this is not mordanted and is only a temporary dye. Since they wove no fibers of cotton or wool, the art of dyeing and use of mordants was never developed to a very high degree.

Clothing

The traditional clothing of all Ovambos in their subtropical climate was very simple aprons in front and back, or sometimes skirts for the women. They had no fibers for weaving cloth, so their clothing consisted of tanned animal hides or the stomach lining (tripe) of cows or oxen.

The tanning of hides was performed by a specialist. With the aid of other men, the ox hide was stretched out on the ground and all fat and connective tissue scraped off. It was then rubbed with coarse millet (*enghundu*) and water; this paste was rubbed off and the hide was dried in the sun. Next it was rubbed with butter or vegetable oil obtained from one of the species of *Ximenia* (*oshikukulu, oshimbupeke,* or *oshipeke*) and mixed with cattle dung. The hide is trampled on until soft (Loeb, 1962), excess oil is rubbed off, and it is ready to be cut up for clothing or sandals worn by both men and women.

All women's aprons are rubbed with red ochre mixed with butter or vegetable fat. These mixtures color and keep the leather soft, and the red ochre is the same mixture used as a cosmetic on skin and hair. See cosmetic section for sources of dye and fat. For illustrations of traditional dress, see Figure 17, and refer to Ella-Marie Loeb's excellent sketches, Plates A–C, and some of the following figures in Loeb (1962).

Ornaments in the form of broaches and buttons were sewed on aprons or skirts for special occasions. The ornaments with carved and burned designs resemble the geometric patterns on carved cups. They were made from elephant tusk ivory or the very hard endosperm of the palm seed, *Hyphaene ventricosa* (*omulunga*), sometimes called vegetable ivory.

Needles used in sewing were obtained from several trees, especially the long straight spines of *Acacia nilotica* (*omutyuula*). Iron needles made by blacksmiths are occasionally also used. Thread for sewing is obtained from fibers of the pounded leaves of *Sanseveria aethiopica* (*omuse*) or *S. pearsonii* (*engushe*).

Hats were not worn traditionally. Now women wear snug fitting crocheted or knitted caps, made from brightly colored yarn, over their short-cut hair. Although men occasionally wear similar hats, usually if they wear a hat it is fashioned after the felt or straw hats of Europe and America, only made from their own palm leaf fibers (*omalunga*) (Fig. 18). Such hats were not woven in 1947.

4. Taxonomic Arrangement of Plants and Their Uses

On the right side of the same line with the scientific plant name, the herbarium vouchers collected either by me or by Mrs. Ella-Marie Loeb are indicated. All Rodin collections have duplicates from the 1947 collections, numbering roughly from *2500* to *2800*, with the Bolus Herbarium, University of Cape Town (BOL); National Herbarium, Botanical Research Institute, Pretoria (PRE); Royal Botanic Gardens, Kew (K); British Museum (Natural History) (BM); United States National Herbarium, Smithsonian Institution (US); Field Museum of Natural History, Chicago (F); and University of California, Berkeley (UC). Collection numbers of the second expedition in 1973 run from *8900* to *9393*, and duplicates are deposited with the S.W.A. Herbarium, Windhoek (WIND); South African National Herbarium, Pretoria (PRE); Botanische Staatssammlung, Munich (M); Royal Botanic Gardens, Kew (K); Missouri Botanical Garden (MO); University of California, Berkeley (UC); and Robert F. Hoover Herbarium, California Polytechnic State University, San Luis Obispo (OBI). A partial set is deposited with the Economic Herbarium of Oakes Ames, Botanical Museum of Harvard University (ECON).

Only the most common names in English, German and Afrikaans are included. Ones selected are either used locally or listed in Smith (1966) or LeRoux (1971). Following the Kwanyama name, older forms are included, and if the meaning of the Kwanyama name is known this is enclosed in square brackets. See Table 4 for general terms used for plants. Descriptions are intentionally short and often incomplete, because of space limitations. Some comments are included on active chemicals, where known, especially for medicinal and poisonous plants, mostly from Watt and Breyer-Brandwijk (1962). Plural forms of Kwanyama names are used only in indexing if that is the only form in common use.

All known uses of plants, both from my own informants and from the literature, are included. Any information contradictory to past records is included, as it often means a change of usage through time. The Appendix contains lists of plants by categories of specific uses such as wood carving, fibers, fruits, etc.

Nonvascular Plants

No algae in the *oshanas* or ponds are utilized by Kwanyamas. Kwanyamas recognize some fungi and have some knowledge of which mushroom-like plants are edible or poisonous. They have no idea of how to grow or obtain their nutrients, although they recognize some habitats in which specific types always occur. There were four or five mushroom-like plants that my informant did not recognize and did not know whether they were edible or poisonous. Fungi which were recognized include the following: *Egege*. A mushroom-like plant, very dark to black, resembling *Okahua xuilili* except for its darker color. It is poisonous and lethal. In cases of poisoning, Kaffir corn meal is boiled with water and given to the person as an emetic. *Okaklahambo* [small-stays-in-kraal]. A small edible mushroom found in kraals. *Okaxwilili*. An edible mushroom with a light-colored pileus (top). *Oova, omaova* (pl.) (formerly spelled *ōva*). An edible mushroom with a long thick stalk. It grows at the edge of termite mounds in rainy season. Black stem rust occurs on stalks of millet (*Pennisetum typhoides*) but was not common the year we lived there. My informant said that some plants may become badly infected, and it is recognized as a disease that reduces crop production. Closed sorghum smut (*omembe*) occurs occasionally in heads of Kaffir corn (*Sorghum caffrorum*); the kernels become enlarged and filled with black spores. Kwanyamas do not use such infected grain because it is considered to be poisonous.

A gray lichen was gathered about 100 km east of Oshikango. It is dried, stamped into a fine powder and used as a body powder, much as Europeans use talcum. It has a faint but pleasant odor.

Vascular Plants

Acanthaceae

Acanthopsis disperma Nees
Loeb 51

Blepharis acaulis Lindley in Loeb.

Kwanyama: *ombya yambuda* [hog-of-the-yambuda], formerly spelled *ombua jambuda*.

TABLE 4. Basic glossary of general terms used for plants among the Kwanyamas.

Efina, omafina (pl.), trunk of tree, or any stem.
Efo, omafu (pl.), leaf.
Enanga, seeds.
Engongua, berry.
Epya, omapya (pl.), garden or cultivated piece of land.
Evanda, omavanda (pl., normally only plural form used), commonly translated into English as "cabbages," these consist of "spinach" or potherbs of many herbaceous species which have been boiled and made into thin flat round cakes and dried either in the sun or sometimes near a low fire.
Oilia, cereals.
Oimboidi, general term for herbs, i.e., low-growing, weedy, herbaceous plants.
Oimbodi yeenhemo, any herb in flower.
Okan-, diminutive prefix applied to small plants.
Olambika, strong alcoholic brandy made from fermented and distilled fruit.
Oluhoni, stem of any grass.
Omavanda (see *evanda*).
Ombuto, seed of any plant.
Omutiwoudijo, any poisonous plant, used mostly by Bushmen.
Onghata, ring of grass or palm leaves placed so as to hold baskets or pots on women's heads (*okanghata,* a small *onghata* for girls).
Ongubu, eengubu (pl.), any hedge, usually thorny.
Onhemo, eenhemo (pl.), any flower.
Onyanga, eenyanga (pl.), onion-like bulb; *okanyanga, ouyanga* (pl.), a small onion-like bulb; also *omanyanga,* in Amaryllidaceae.
Onyapi, small ear of maize, called "mealies" in South Africa, *omahangu* (millet) or *oshilyavala* (Kaffir corn or milo maize).
Oshilukusho, toothbrush from one of several species of trees or shrubs made by fraying ends of twigs.
Oshilya, oilya (pl.), entire cereal plant with all branches and seeds; also grain in general.
Oshingadja, any food less important in the meal than *omuhangu* (millet); sometimes called "relishes."
Oshingokoto, any seed or nut which has to be cracked to obtain seed.
Oshitutumino, sucker growing out of any cut or pruned tree.
Osiimati, oumati (pl.), any fruit.
Osimbodi, wild plant, weed.
Osimeno, plant.
Oxuku (only plural used), any seed or nut which has had shell removed.

Description: densely leafy herbaceous perennial, leaves and bracts spiny-toothed, corolla 1-lipped, stamens not divided at apex, seeds covered with feathery hygroscopic hairs, fruit a compressed ovate capsule.

Uses: unknown.

Hygrophila gracillima (Schinz) Burkill
Loeb 11

Kwanyama: *efinde, omafinde* (pl.) (originally given to Loeb as *ofinde*). Also see *Cyperus sphaerospermus.*

Description: small herbs distinguished by a bilabiate tubular corolla with 4 stamens in axil of spineless bract.

Uses: unknown, although has same Kwanyama name as a sedge (*Cyperus sphaerospermus*). Loeb et al. (1956) do not make clear any use of this plant.

Justicia matammensis (Schweinf.) Oliver
Rodin 9255; Loeb 570

J. psamnophila Dinter manuscript was the determination in 1948 for Loeb's specimen, but this is a *nomen nudum.* I have not seen Loeb's specimen, but this is the only species common in Kwanyama area, and I assume it to be same as my collection.

Kwanyama: *omumakani, omimakani* (pl.) Loeb's name, as my informant could not find a name for it.

Description: low herbaceous erect annual, flowers bilateral, white with minute red or purple streaks in corolla throat; spineless leaves and bracts.

Uses: 1. If a man who is going to spear fish rises early in morning, he chews a branch and spits it on his harpoon. It contains magic to attract fish so that they can be speared. He must do this before speaking to anyone (Loeb et al., 1956). 2. In order to find his brother's murderer, a man must rise early in morning and, without speaking to anyone, chew a branch of this plant. The masticated material is then rubbed over his own face. This magic herb will assure his finding the murderer (Loeb et al., 1956).

Justicia sp.
Loeb 165

Kwanyama: *okangoyo, oungoyo* (pl.) [little-stiff-edge-of-palm-leaf].

Uses: unknown.

Monechma divaricatum (Nees) C.B.Cl.
Rodin 9106

Common names: wild lucerne, wildelusern.

Kwanyama: *okaliamufita.*

Description: bushy perennial with small bracts, broadly tubular bilabiate corolla, orchid and white flowers, lower lip 3-lobed, middle lobe pinnately ribbed, stamens 2, fruit a subglobose 2-seeded capsule.

Uses: 1. Fruit eaten by people. 2. Plant eaten by cattle.

Petalidium sp. #1.
Loeb 343, (*344* K)

Kwanyama: *ohomo, eehomo* (pl.) [single-palm-leaf-strip]. Also see *Melhania acuminata.*

Description: shrubs and perennial herbs, flowers bilabiate, hairy, upper lip 2-lobed, lower lip 3-lobed, stamens 4 in 2 pairs, inflorescence on contracted side shoots, fruits a compressed capsule narrowed at base and apex, ovary 2-chambered with 2 seeds in each chamber, 2 large bracts enclosing calyx.

Uses: plant is thrown into fire and the smoke allowed to envelop legs as cure for legache (Loeb, 1956).

Petalidium sp. #2.
Loeb 112, (*510* PRE), *520*

Kwanyama: *okamokove* (*Loeb 112*).

Uses: unknown.

Aïzoaceae

The genus *Mesembryanthemum* was used by Linnaeus (1753) and many successive botanists for a large and highly diversified group of species, primarily succulent plants of desert areas in southern Africa. Later monographers have divided it into as many as 165 genera. Only one species is represented in my collections. Some genera such as *Giesekia, Limeum,* and *Mollugo* have been put into separate families, e.g., Molluginaceae.

Sesuvium sesuvioïdes (Fenzl) Verd.
Rodin 9032, 9208, 9392; Loeb 63, 492

Kwanyama: *omundjulu, omindjulu* (pl.). My informant spelled *Rodin 9392 omujulu.*

Description: nearly prostrate herb, less succulent that most members of family, flowers magenta-red, fruit transversely dehiscent at middle.

Uses: 1. Mixed with other potherbs when boiled to make it soft and tasty. 2. Used as food for pigs. 3. Stems, or preferably roots, stamped, mixed with water, and used for relief of measles, smallpox, and nosebleed.

Amaranthaceae

The small flowers of this family have dry or membranaceous perianth segments, always subtended by usually hyaline (papery) and often spinescent bracts or bracteoles.

Achyranthes sicula L.
Rodin 9110

A. asper L. var. *argentea* C.B.Cl.
A. argentea Lam.

Common names: burweed, grootklits, langklits.

Kwanyama: *oshikanyata, oikanyata* (pl.), or *onghanyata, eenghanyata.* My informant gave me also *nanghanjata,* which with modern orthography would be *nanghanyata.* See also *Triumfetta pentandra* and *Pupalia lappacea.*

Description: small erect reddish-stemmed, subglabrous annual; roots spindle-shaped; flowering axis slender, false staminodia with short fringing cilia; leaves elliptical to oval, sharp-pointed.

Uses: fruits get caught in socks.

Aerva leucura Moq.
Loeb 490

Common name: aamberbossie.

Kwanyama: *eiso-lonhangu lokomulonga waNghumbi* [the-eye-of-a-fish-in-the-wa-Nghumbi-tribe]. The last two words, Mr. Taapopi informs me, can be left out, as they refer only to Nghumbi tribe.

Description: the genus is distinctive because it has more than 1 stigma, woolly perianth segments, and a uniovulate ovary.

Uses: unknown.

Amaranthus caudatus L.
Loeb 14 (Det. PRE)

Kwanyama: *embodi-lityaana* (Loeb had it *embodi litiljana*). *Embodi* [red-plant], a general name for herbaceous or succulent low herbs.

Description: the genus is distinctive because of its 2 or 3 stigmas, glabrous perianth segments, and a single-seeded ovary; inflorescence is usually a spike.

Uses: unknown.

Not previously reported in Ovamboland nor in South West Africa; may be misidentified. I suspect it may be *A. cruentus,* the only other species collected in Ovamboland besides *A. thunbergia,* and only once, by Schinz.

Amaranthus thunbergia Moq.
Rodin 9049; Loeb 72

Common names: Cape pigweed, red devil, hanekam, kalkoenslurp, rooiduiwel.

Kwanyama: *ekwakwa,* formerly *ekuaka.* Food from this plant is called *elopa.*

Description: erect glabrous annual, perianth somewhat shorter than bracts, which are 0.75–1.5 mm long; leaves rhomboidal-elliptical to obovate, 1–2 cm long; flowers in short axillary spikes not over 5 mm long, bracts of the perianth pink.

Uses: leaves used as potherb, boiled, salted, and eaten; or dried in flat cakes (*omavanda*) called "cabbages" for later use, when they are again boiled, salted, and eaten.

Celosia argenteiformis (Schinz) Schinz
Rodin 8939, 9047

Kwanyama: *eshilalodi* (see *Hermbstaedia*); *embodi* general name for herbs, especially low-growing succulent plants.

Description: erect annual to 2 feet high, stems somewhat reddish and leaves with reddish midribs. Inflorescence bracts white in one specimen (*Rodin 9047*), tips of petals reddish, anthers purple.

Uses: leaves boiled as potherb are delicious and tender. Extra material dried as flat cakes (*omavanda*) for dry season, when they are again boiled and eaten, usually with salt.

Gomphrena celosioïdes Mart.
Rodin 9081

Kwanyama: unknown.

Description: nearly prostrate herb with capitate terminal inflorescence, bracts white, and anthers yellow.

Uses: leaves used as potherb; may also be dried into flat cakes (*omavanda*) for later use.

Hermbstaedia sp.
Loeb 73

Kwanyama: *oshilalodi* [tail-of-a-sheep].

Description: perennials with small alternate leaves; 5, 2-lobed staminodia alternating with 5 fertile stamens; stigmas normally 2, bisexual flowers frequently accompanied by a sterile one, more than one seed per ovary.

Uses: leaves boiled as potherb and eaten with salt; may also be dried as flat cakes (*omavanda*) for later use.

Kyphocarpa angustifolia (Moq). Lopr.
Rodin 9298

Cyathula angustifolia Moq.
Sericocoma hereroensis Suess. & Beryele

Kwanyama: unknown.

Description: annual herb 0.6–1 m high, bracts of inflorescence white, covered with white or brown silky hairs; leaves linear-lanceolate, 2–5 cm long, 1–3 mm wide; style lateral and ovary distinctly horned laterally.

Uses: unknown.

Pupalia lappacea (L.) Juss.
Rodin 9113; Loeb 122

Common names: sweethearts, beesklits, klits.

Kwanyama: *oshiyooseuta, oiyooseuta* (pl., an irregular plural) [teeth-of-a-puffadder]; formerly *osijoseuta.* See also *Clerodendrum uncinatum* and *C. nanghanjata* (*Rodin 9113*).

Description: weedy herb to 1.3 m high with elliptical to lanceolate leaves; flowers sometimes clustered; sterile bracts with hooked tips. The hooked tips may be related to the Kwanyama

name for *Clerodendrum uncinatum* (above), which also has hooks, but on stems.

Uses: fruits catch in clothing.

AMARYLLIDACEAE

Crinum crassicaula Baker
Rodin 9055

Kwanyama: *omanyanga,* general term for many bulbous plants; formerly *omanjanga.*

Description: basal rosette of somewhat undulate-margined leaves, to 38 cm long, 3–10 cm wide, arising from very large bulb to 25 cm long, 15 cm wide; umbels to 25-flowered, perianth segments narrow, pink. Growing next to a pond. One bulb had 2 flower stalks. Not previously confirmed in South West Africa (Merxmüller, 1966–72).

Uses: goats graze on leaves.

Crinum rautanenianum Schinz
Rodin 9021

Kwanyama: *omanyanga,* general term for bulbous plants; formerly *omanjanga.*

Description: basal rosette arising from bulb ca. 7–8 cm in diameter, covered by two layers of stiff brown bulb coats, 6 or more flowers per umbel, perianth white, style tip pinkish. Growing in low flats, sometimes in water in *oshanas* or at edge of water, flowering only after beginning of rainy season.

Uses: goats graze on leaves.

Nerine duparquetiana (Baillon) Baker
Rodin 9199 (Ruacana)

Kwanyama: *omanyanga,* general term for bulbous plants; formerly *omanjanga.*

Description: bulbous plant with basal rosette of leaves 1–4 cm wide; ca. 15 flowers per umbel on pedicels 3–8 cm long; perianth segments narrowly-lanceolate, pink. Damp places in rainy season.

Uses: goats graze on leaves.

ANACARDIACEAE

Ozoroa schinzii (Engl.) R.A. Fernandes
Rodin 2708, 8959, 9138; Loeb 143, 146

Heeria schinzii Engl.

Kwanyama: *oshifiku, oifiku* (pl.) [bad-day].

Description: shrub 1.5–2 m high; leaves simple, silky-pubescent beneath; clusters of small flowers on separate male and female plants with rudiments of other sex present; fruits flattened, somewhat discoid, reddish when mature.

Uses: 1. Dried stems especially desired to start fires in kraal. 2. According to Phillipus Paulus, fruits and leaves boiled and drunk as tea for upset stomach, but which parts and how used were not mentioned by Loeb et al. (1956). (Although this species is not mentioned in Watt & Breyer-Brandwijk (1962), most species of *Ozoroa* contain some resins and fixed or volatile oils, and many are used for diarrhea and other stomach disorders.) 3. Fruits strung into necklaces as toys for children.

Rodin and Loeb material from 1947–48 was determined as *Heeria namaensis* Schinz & Dtr. = *Ozoroa namaensis* (Schinz & Dtr.) R.A. Fernandes, but this was apparently a misidentification because that species is a tree, and all specimens collected were shrubs.

Rhus ciliata Licht. ex Roemer & Schultes
Rodin 9183 (Ruacana)

Kwanyama: unknown.

Description: woody shrub to 3 m high, leaves trifoliate with nearly entire leaflets, apex acute to mucronate, pubescent on both surfaces, sometimes resinous on upper surface; inflorescence a lax terminal or axillary panicle of very small flowers, petals 1.25 mm long; drupes brownish, 4–5 mm in diameter, subglobose.

Uses: unknown.

Rhus tenuinervis Engl. & Gilg
Rodin 9077 (Det. Merxmüller), *9151* (Rundu) (det. Geiss & Merxmüller)

Kwanyama: *omupombo, omipombo* (pl.).

Description: woody shrub 1.6 m high, stems and petioles pubescent, leaves trifoliate, ovate but variable, apical leaflet 2.5 to more than 5.7 cm long, margins crenate to sub-lobed, somewhat pubescent on both sides; fruit flattened, subquadrangular or subcircular, covered with white or graying bloom.

Uses: 1. Stems burned and smoke allowed to drift into beehives to drive off bees when honey is to be taken. Mentioned by Loeb et al. (1956). 2. Leaves crushed and rubbed on skin to prevent beestings when recovering wild honey. 3. Leaves chewed and spit on beestings to relieve pain and promote healing.

Rodin 9077 was misidentified as *R. populifolia* E. Mey. at PRE.

Sclerocarya caffra Sond.
Rodin 2622, 2700, 8962
S. schweinfurthiana Schinz

Common names: marula, maroelaboom.

Kwanyama: *omwoongo, omyoongo* (pl.); formerly *omuongo,* for tree and fruits. *Ongongo, eegongo* (pl.) the nut, literally the seed.

Description: wide-spreading, much-branched tree up to 20 or more m high, leaves pinnately compound with 7–11 leaflets; fruit a nearly oblong, somewhat irregular yellow drupe about 4 cm across; beneath leathery exocarp is fleshy mesocarp containing sugar and an acid resinous pulp; stony endocarp contains 2 or 3 seeds, which are eaten raw.

Uses: 1. Fleshy, slightly acidic sweet fruit is eaten raw. 2. The very delicious seeds are removed from the very hard endocarp by hitting shell on an upturned axe blade with a round stick 3 or 4 cm in diameter and perhaps 50 cm long, the kernels then being skillfully removed by a small iron tool (*oluvela*), developed by native blacksmiths long before coming of Europeans to the area. Nuts eaten raw or cooked with gravies and roast chicken. Chickens formerly were roasted in clay pots, gravy being made after the chicken was cooked. The author can personally endorse the excellent quality of this dish, usually served with *omahongu* (*Pennisetum*) porridge, but sometimes with whole-cooked Kaffir corn (*Sorghum*) or other variations. Served on shallow plate woven with palm-leaf fibers, and eaten with the four fingers held closely together. 3. Ripe fruit yields a juice readily fermented into an alcoholic liquor called *omongo* or marula wine. Juice is squeezed out by hand with aid of sharpened antelope or cow's horn. Usually women from several kraals gather under one big tree and spend day making wine. Juice is usually squeezed into small woven palm-fiber bowls which have no water-proofing mastic. When small bowl is filled with about two cups of juice, it is poured into large unglazed pottery vessel holding several gallons and allowed to ferment at least overnight or for several days. Although it can develop a high alcoholic content because of the sugar present, it quite often is consumed before alcoholic content reaches maximum concentration. Great amounts of marula wine are consumed during the Month of the Marula (discussed elsewhere in this book). Since the wine is usually drunk before it is strong enough to cause inebriation, few drunken people were observed. 4. Marula wine can be distilled to make brandy (*olambika*), but the wine is preferred. 5. Seeds are put on stamping block, and oil (*okjove*) is expressed to be used in cooking, especially of meats, or in boiled potherbs. 6. Unfermented fruit juice is mixed with water and drunk as a beverage called *oshinua.* 7. Seed oil may be mixed with red ochre and put on skin and women's cowhide or cow-stomach aprons. This was a very common tradition in 1947, but had been almost completely abandoned by 1973, since most women now wear dresses. My informant stated that only pagan women now follow the old custom.

Tree is so highly valued for its fruit that it is never cut down. Bark is used by some tribes as a bitter tea for malaria, according to de Winter et al. (1966), but I have found no such usage among Ovambos.

Apocynaceae

Adenium boehmiam Schinz
Rodin 9175, 9186 (both at Ruacana)

Common name: rylgif [arrow-poison].

Kwanyama: *oudiyo* [poison]. Given by LeRoux (1971) as *oudyo.* Formerly *oudijo.*

Description: unbranched succulent stem 1–1.3 m high; deciduous leaves clustered at stem apex, ovate to obovate, leathery, with numerous parallel secondary veins; flowers tubular-funnelform, very showy, pink to reddish; fruit of 2 dry follicles, the seeds with tufted hairs.

Uses: my informant stated that *oudiyo* is an arrow poison no longer used, since most hunting is now done with guns.

Watt and Breyer-Brandwijk (1962) state that latex from this plant is the chief arrow poison used by the Bushmen in South West Africa and that it is used also by Ovambos. Dalziel (1937) reports it to be used with tambootie, *Spirostachys africanus,* as an arrow poison in South West Africa, but none of my Ovambo informants had heard of this use in Ovamboland. Loeb et al. (1956) discusses its use for arrow poison and states that two substances are used. The fluid from the mouth of a chameleon (*ofimbi*) is added to *oudiyo* latex. This mixture is boiled in a pot in the kraal where the arrow poison maker, *omukangeli,* works hidden and naked. The boiled material is added to arrowheads, while the maker gives the call of a hyena.

Watt and Breyer-Brandwijk (1962) state that four cardiotoxic glucosides and one resin (*echujon*) have been isolated from the latex. These poisons work very slowly so that once an animal is hit, it must be stalked for several hours before it lies down to die. I suspect that knowledge of poisoning arrows was obtained long ago from Bushmen.

Carissa edulis Vahl var. *tomentosa* Stapf
Loeb 491

Kwanyama: *ekisinananga lokumolonga.*

Description: evergreen shrubs 1–1.5 m high, with simple or forked spines to 4 cm long, leaves variable in shape, from suborbicular to lanceolate, flowers pinkish in crowded terminal cymes, fruit 1.5–2 cm long, dark purple, edible.

Uses: fruit eaten raw.

Aponogetonaceae

Aponogeton rehmannii Oliver
Rodin 9165 (road to Ruacana)

Common names: pondweed, waterruintjie.

Mbalantu: *oghnapa.*

Description: aquatic perennial plant in 6 inches of standing water with few linear, erect revolute leaves arising from elongated corm or tuberous rootstock; inflorescence a bifurcating spike subtended by 2 bracts, the inflorescence white, a very distinctive apetalous flower only on inner (or upper) side of spike.

Uses: corm eaten raw. My Kwanyama informant recognized it as a species used by his people, although my specimen collected in an area of adjacent Ovambo tribe, the Mbalantu.

Araceae

Pistia stratiotes L.
Loeb 501

Common name: water lettuce.

Kwanyama: *okambodi, oumbodi* (pl.) [small-herb].

Description: small floating stemless herb with rosette of leaves and a tuft of roots. Small axillary spathes bear male and female flowers. On water in ponds and receding waters of *oshanas.*

Uses: unknown.

Asclepiadaceae

The milkweed family is characterized by presence of latex, often white, paired follicles from each flower which has a corona, sometimes with horns.

Caraluma lutea N.E. Br. subsp. *vaga* (N.E. Br.) Leach
Rodin 2654, 2655, 8921, 9023 (Det. Giess)

Common names: aasblom, ghaap, kopseer, slaanghwaap.

Kwanyama: unknown.

Description: succulent perennial, stems 5-angled, purple mottled, usually ca. 15 cm high, much branched near base with fleshy protuberances on angles; flowers clustered, flower lobes 7–25 cm long, brownish to purplish-streaked with yellow (reported to be all yellow in some localities but not in Kwanyama area); carrion scented.

Uses: not used.

Ceropegia nilotica Kotzschy
Rodin 9117 (Det. Merxmüller)

Common name: kombrua.

Kwanyama: *omubutu yanamukuto* [flowers-like-a-bag] [*kuto* = bag].

Description: perennial vine climbing in shrubs; leaves ovate to lanceolate, glabrous; flowers tubular with swelling at base and an enlargment of tube at expansion of corolla lobes, tube mostly cream-colored, distal portion of corolla lobes purple, or tube green with purple dots at summit, greenish hairs inside corolla lobes; slender follicles paired, 20 cm long but sometimes single; taproot fleshy, thickened.

Uses: fleshy roots eaten raw or cooked. Considered a "wild potato."

Decabelone barklyi (Thiselton-Dyer) N.E. Br.
Rodin 2656, 8920; Loeb 286, 288

D. grandiflora K. Shum.
Tavaresia grandiflora Berg

Common name: katstert.

Kwanyama: two names recognized: *okukato lekadi, omalukato omakadi* (pl.) [*lekadi* = female]; and *olukato lendume, omalukato omandume* (pl.) [*endume* = male]. According to Loeb (1955a–c) the male plant apparently is supposed to have papillate structures within corolla. However all flowers I observed were bisexual and papillate. Phillips (1951) mentions that papillate structures sometimes occur in the corolla but have no connection with reproduction.

Description: leafless succulent, cylindrical stems, 8–14-ribbed, 15–20 cm high, much-

branched from base, ribs bearing clusters of fine, soft prickles in 3s; flowers tubular, almost trumpet-shaped, 10–15 cm long, 5-lobed, yellowish, purplish veined or spotted; grows mostly under shrubs.

Uses: grown at three places around kraal to ensure domestic tranquility; at kraal entrance, in sitting room, and in main sitting place (Loeb, 1955a–c). When a move is made to a new kraal, new individuals are collected and planted, and the old ones are left behind. This custom apparently was no longer followed in 1973.

Duvalia polita N.E. Br.
Rodin 8922, 9023

Kwanyama: unknown.

Description: succulent with 5-ribbed stems, blunt soft teeth on angles, 15–20 cm high, flowers ca. 4 cm in diameter, star-shaped with glabrous corona; brownish purple, corolla with delicate marginal hairs; grows mostly under shrubs.

Uses: not used.

Gomphocarpus tomentosus Burch.
Rodin 9006; Loeb 15, 92, 376

Asclepias burchellii Schltr., the name used by Loeb.

Common names: milkweed, wild cotton, bergkapok, wildgaring, wildekapok.

Kwanyama: *etamupya, omatamupya* (pl.), formerly *etamupia* [drive-out-unluckiness]; also *omupia* (pronounced more like "omupsia"), and *omupya* (formerly *omupja*) by some.

Description: perennial 1–1.5 m high; leaves lanceolate 3–15 cm long; flowers in compact cymes; flowers small with greenish corolla lobes and cream corona hoods; paired follicles covered with soft prickles; stems and leaves tomentose, containing milky latex; foliage with slightly mephitic odor.

Uses: 1. If a cow dies from an unknown cause (or possibly anthrax), twigs with leaves and roots (the latter considered the best) are cooked with the meat to prevent illness to those who eat it. 2. Stems and leaves dried, roasted, and powdered to apply to open sores and wounds, especially sores of syphilis and gonorrhea. 3. Called the salvation plant by Loeb et al. (1956), because eaten by Africans when they wish to escape revenge after committing a wicked act or breaking a taboo. If eaten at all, it is probably taken in a small quantity because the latex is toxic. Watt and Breyer-Brandwijk (1962) do not mention this species, but another species in South West Africa is used by Bushmen as arrow poison.

Marsdenia macrantha (Klotz) Schltr.?
Loeb 126

Kwanyama: *etanhoka, omatanhoka* (pl.) [chaser-of-mamba-snakes]; formerly *etanoka.*

Description: climbing perennial vine with opposite, ovate to cordate leaves; inflorescence a compact umbel-like cyme; flowers light yellow, corona glabrous but inner corolla lobes villous hairy; paired follicles up to 8 cm long, 3 cm in diameter, smooth and glabrous.

Uses: unknown.

Identified as *Marsdenia* sp., but I have not seen the specimen and there is only one species known from South West Africa.

Orthanthera jasminiflora (Decne.) Schinz
Rodin 8910; Loeb 28b, 45, 116, 351

Common names: moerwortel, sandmelktau.

Kwanyama: *ekoka, omakoda* (pl.) [thing-which-drags], also *eschilulua* [long-stems-on-the-ground], also for plant and fruit *engodyo* or *engodjo* (older spelling). The name *ekoko* applies to the dragging away of long stems and roots when fields are cultivated.

Description: herbaceous perennial vine; leaves oblong-lanceolate, rounded or cordate at base, scabrid; tap root long and straight; flowers white, tubular, greenish outside, in umbels; paired follicles up to 15 cm long; colorless latex throughout plant.

Uses: 1. Stems worn like belts around women's hips and stomachs to prevent backache while hoeing. 2. Pods eaten raw. 3. Planted in or by kraals to bring good luck (from Simon). 4. When new shop or café opens, branches are put on the ground for people to walk on to bring good luck to shopkeeper (from Johannes Oska). 5. An infusion made by boiling leaves; when cooled, put into ear for earache (from Johannes Oska).

Pergularia daemia (Forsk.) Chiov. var. *daemia*
Rodin 9226, 9325

Kwanyama: *okanongo,* also *etanoka.* See also *Marsdenia macrantha.*

Description: herbaceous vine, often covering shrubs or fences by kraals; leaves opposite, cordate at base, 2–12 or more cm long; flowers greenish to cream-colored with horns on corona;

paired follicles 5–8 cm long with short fleshy prickles; latex white throughout.

Uses: 1. Latex used to heal cuts and wounds (from Rev. Nathaniel Paulus). 2. Specimen called *okanonga* (*Rodin 9226*) was used medicinally. Leaves boiled in water and cooled; infusion dropped in eye with feather for white spots in eye.

Stapelia leenderizae N.E. Br.
Rodin 9121

Kwanyama: unknown.

Description: leafless succulent with squarish stems; flowers bowl-shaped with 5 small lobes, purplish brown; follicles paired. Cultivated at Oshandi. Not previously reported from South West Africa.

Uses: not used.

Stapelia schinzii Berger & Schltr.
Rodin 9122

Kwanyama: unknown.

Description: leafless succulent with squarish stems; flowers open star-shaped, opening wide, 7.5 cm in diameter, brown-purple inside, lighter outside, latex colorless. Cultivated at Oshandi. Not previously reported from Ovamboland.

Uses: not used.

Genus undetermined
Loeb 111

Kwanyama: *nadinga, oonadinga* (pl.) [of-a-sway-back].

Description: woody vine with opposite leaves; paired follicles. Flowers not observed.

Uses: 1. Enema for rheumatism, but parts of plant used not identified (Loeb et al., 1956). 2. Pods are eaten according to Roland Kalitu, but we could not find the plant.

Note: Mrs. Loeb also found plants of an undetermined genus called *enyamana*. This vine with cordate leaves was sterile and no uses are known.

BIGNONIACEAE

Catophractes alexandri D. Don
Rodin 9125 (near Etosha Pan)

Common name: swartdoring.

Kwanyama: *okalyadi.*

Description: shrub about 2 m high; leaves simple, white-tomentose, some axillary branches spinescent, flowers borne laterally in leaf axils, corolla tubular-campanulate, white, showy, perianth tube about 7 cm long, lobes broad, about 2–3 cm long; ovary 2-chambered, elliptical-oblong, capsule with warty surface, woody, seeds winged, long-pilose.

Uses: unknown.

Rhigozum brevispinosum O. Kuntze
Rodin 2638, 9380

Kwanyama: *omumakani, omimakani* (pl.) [big-stranger]. See comments under *Justicia psamnophila.*

Description: woody shrubs or small trees to 3 m high, with thorns; leaves trifoliate on cushions; corolla tube narrow below, open campanulate above, lobes obovate, yellow; fruit an oblong or elliptic oblong capsule, short-beaked about 8 cm long by 1.5 cm wide, seeds winged.

Uses: 1. Fences made from stems. 2. Magic uses. If you carry a stick it will bring good luck (Canon Gabriel Nameuja). 3. If you strike this plant with a stick, you will have a fight with someone (Canon Gabriel Nameuja).

BLECHNACEAE

Blechnum punctulatum Sw.
Loeb 121

Lomaria punctulata Kunze

Common name: hard ferns.

Kwanyama: *oshiveta, oiveta* (pl.). Also see *Aptosimum* sp., and *Bergia decumbens.*

Description: cluster of fronds arising from a short erect rootstock and rhizome; leaves pinnately compound with broad flat pinnae on sterile leaves 20–90 cm long, 8–12 cm broad at middle, tapering at both ends; fertile fronds distinct with very narrow leaflets; sori apparently marginal, marginal indusial flap simulates leaf margin. Rare. Descriptive data from Adamson and Salter (1950).

Uses: 1. The slightly astringent fronds and rhizomes are crushed and placed on bleeding wounds, as are other plants called *osiveta* (above) (Loeb et al., 1956). 2. One frond, like a plume, is in each girls hair during the ash girl phase of the *efendula* (puberty rites).

BOMBACACEAE

Adansonia digitata L.
Rodin 2637, 9042, 9201; Loeb 207

Common names: baobab, cream-of-tartar tree, ape breadfruit, kremetartboom.

Kwanyama: *omukwa, omikwa* (pl.) formerly *omukua* tree; *ekwa, omokwa* (pl.) fruit. Loeb (1955b: 163) mistakenly called this *omutaku,* the name for another large forest tree, *Entandrophragma spicatum.*

Description: trees to 20 m high and often 5 or more m in diameter, spectacular for large diameter; leaves palmately compound; flowers white, pendulant on long peduncles, 10–13 cm across; indehiscent pods with hard outer shell to 30 cm long and 12 cm in diameter, sausage-shaped, filled with soft pulp with dozens of imbedded seeds. Fruit eaten by monkeys and other wild animals. Never occurs in compact groves but individuals always scattered among other trees and shrubs.

Uses: 1. Fruit pulp eaten raw, has pleasant acidic taste similar to cream-of-tartar. Pulp becomes powdery in dried seed pods. Watt and Breyer-Brandwijk (1962) state that powder contains several different tartrates and high percentage of ascorbic acid (vitamin C). 2. Seeds dried, ground into flour for making cakes. 3. Seeds eaten raw. According to Watt and Breyer-Brandwijk (1962), seeds contain no starch, but sugars, proteins (especially globulin), ascorbic acid, and tartrates. Chemical composition varies; in some places seeds are used medicinally. 4. Powdered bark, or *endao* (a grass), or fruit of *omupalala* (*Peltophorum africanum*), used by sorcerers as magic remedy for various ills. Healer takes powder in hand, marks patient on face and lips, and then throws powder to east and west (Loeb, 1955a–c). 5. Wood is too soft and weak for use.

Boraginaceae

(*Cordia* and *Heliotropium* were placed in Heliotropiaceae by Merxmüller, 1966–72)

Cordia gharaf (Forsk.) Ehrenb. ex Ascherson
Loeb 34, 305 (Det. Merxmüller)

C. ovalis R. Br.

Kwanyama: *omuku yumbwa, omiku yumbwa* (pl.) formerly *omuku jumba*; singular has also been spelled *omukwi yumbwa* [fig-tree-dog].

Description: shrub or small tree; leaves suborbicular; calyx and corolla saucer-shaped distinguished by twice-branched style; fruit an elongated elliptical drupe, orange, surrounded by persistent calyx. Fruit edible (Watt & Breyer-Brandwijk, 1962).

Uses: plant parts used as protection against rabies (Loeb et al., 1956). Loeb does not state what parts used. Watt and Breyer-Brandwijk (1962) say that Africans in Tanganyika (Tanzania) use this species, especially leaves and bark, as remedy for leprosy. Other plant parts have also been used medicinally. See *Selago, Geigeria,* and *Dissotis* for other rabies preventatives.

Heliotropium ciliatum Kaplan
Rodin 9217 (Det. Merxmüller)

Kwanyama: *omuyaumuki*; formerly *omujaumuki.*

Description: herbaceous perennial 30 cm high, inflorescence a scorpioid cyme, flowers white. Not previously reported from South West Africa.

Uses: leaves rubbed on skin to relieve swelling.

Heliotropium gibbosum M. Friedr.
Rodin 2684
Tournefortia tuberculosa (Cham.) Gürke (Det. PRE, 1948).

Kwanyama: *embodi,* general name for small herbs.

Description: small herbaceous plant with flowers borne in scorpioid cymes, flowers white.

Uses: unknown.

Heliotropium ovalifolium Forsk.
Rodin 2642, 9019, 9024, 9084; Loeb 184, 533

Kwanyama: *embodi, oimbodi* (pl.) general name for small prostrate herbs (*Rodin 9084, Loeb 533*). Loeb's specimens also bear the names *okambodi, oumbodi* (pl.) [little-herb], and *oshikwashana* (*Rodin 9019, Loeb 184*) [belonging-to-the-oshana], and *okanasama* (*Rodin 9024*) [small-by-the-oshana].

Description: hairy perennial with woody taproot, mostly prostrate or decumbent, inflorescence scorpioid, flowers white, fruit of 4 nutlets.

Uses: 1. Eaten by goats. 2. Considered weed. 3. All "*embodi*" supposed to have medicinal value, but medicinal uses of this species are unknown.

Heliotropium subulatum (Hochst. ex A. DC.) Vatke
Rodin 8990

Kwanyama: unknown.

Description: erect annual, to 30 cm high, flow-

ers greenish. This did not appear to be boraginaceous but determination was made by W. Giess and confirmed by H. Merxmüller, in spite of latter's key (1966–72) listing this species as white-flowered.

Uses: unknown.

Heliotropium supinum L.
Rodin 2647; *Loeb 263, 264, 521*

Trichodesma zeylanicum R. Br.

Kwanyama: *ohanauni, ehananui* (pl.) [destroyer]; also *okadimba kokoshana* (*Loeb 521*).

Description: small decumbent herb with minute spicate or scorpioid white flowers in a cyme; growing in a dry pan. Not previously reported from Ovamboland.

Uses: plant parts ground into powder, mixed with water, and applied to all kinds of tumors (Loeb et al., 1956).

BURSERACEAE

See de Winter (1968) for notes on *Commiphora.*

Commiphora africana (A. Rich.) Engl.
Rodin 2676, 8944, 9306; *Loeb 25*

Common name: vervelboom.

Kwanyama: *omboo, eemboo* (pl.) singular form nearly always used.

Description: small tree with distinctive shiny, peeling green bark, stems spinescent, wood white and strong; leaves trifoliate, leaflets obovate, cuneate at base; fruit a subspherical drupe with 2 ovules and dehiscing along 2 sutures to release a somewhat flattened pair of seeds each covered by an endocarp and a red pseudoaril, apex mucronate, fruit 1.5 cm long. Grown from cuttings; commonly planted near kraals as a source of soft wood for carving utensils.

Uses: 1. Wood from trunks carved into several types of cups and buckets (*eholo* for both). See Fig. 7. They are also carved from *omupala* (*Peltophorum africanum*), and *omuve* (*Berchemia discolor*), both somewhat harder woods. These products are referred to by the general term *eholo*, equivalent to a genus, and include:

Eholo lokukana—milking pail—has special perforated lateral protrusions so leather bails can be used for easy carriage (Fig. 19). *Eholo lomandi*—butter dishes—has special fitted carved lid. Butter kept in this type dish is used for cooking and eating.

Eholo lokulila—vessel for eating purposes—curdled milk commonly stored in it.

Eholo lokuvavela—vessel in which mixture of red ochre and butter or vegetable fats is kept for cosmetic purposes.

Eholo lomalodu—beer mugs (Fig. 7), averaging 8 oz. capacity; these at one time had woven covers, but these are no longer used. Glass quart or pint canning jars have largely replaced these cups for daily beer.

Eholo lomuongo—smaller mugs of same shape used for marula wine and brandy (*olambika*); capacity 4–5 oz.

Eholo longhwambi—chalice- or goblet-type mug, on single central stem or three stems and foot or base. Depending on size, most are considered fancy beer mugs.

All the *eholo* vessels may be elaborately decorated with geometric configurations burned on with special tools; the carving of vessels is among highest artistic attainments by men in this culture. Some spoons (Fig. 10), snuff boxes, dagger sheaths, etc. may also be carved from this wood. 2. Edible raw young roots, eaten like carrots; fibers must be spit out. 3. This species was one of five royal sacred trees planted in kraals. For details see *Colophospermum mopane* (Loeb et al., 1956).

Commiphora angolensis Engl.
Rodin 9009 (Det. Giess)

Kwanyama: *omboo, eemboo* (pl.) singular form nearly always used.

Description: shrub or small tree 2 m or more high, peeling green bark and soft white wood, stems spiny; leaves trifoliate, leaflets elliptical or broadly lanceolate, finely crenate or dentate, sometimes entire, 1.5–3 cm long, terminal leaflet always larger, rarely with 5 leaflets, fruit a sessile drupe, ovate, slightly pointed at apex, red when ripe, dehiscent by 2 valves, releasing seed and endocarp. Very close to *C. africana,* but obovate leaves of latter help to distinguish it.

Uses: same as for *C. africana.*

Commiphora glaucescens Engl.
Rodin 9167 (Ruacana)

Kwanyama: *omboo, eemboo* (pl.); also *omukuku,* possibly derived from the Ombulantu,

FIGURE 19. Carved wooden milk pail from *omboo, Commiphora africana.*

where this name is used for this species. For *omukuku* also see *Combretum imberbe.*

Description: tree 10 m high, yellowish, papery, green bark; simple entire leaves, up to 7 cm long, linear-elliptical to ovate, distinguished by gray undersurface of leaves; fruit pedicellate, a small ovate drupe that dehisces into 2 halves to reveal a fleshy finger-like pseudoaril.

Uses: 1. Foliage and branches eaten by cattle. 2. Where no water available, tree is cut, and the water that runs out is drunk. 3. Cups and buckets carved from its white wood.

Commiphora pyrecanthoides Engl. subsp. *pyrecanthoides*
Rodin 9026, 9044, 9198 (Ruacana)

Kwanyama: *omboo, eemboo* (pl.).

Description: tree 7 or more m high, about 30 or more cm in diameter, axillary branches form spines bearing leaves and sessile fruit, older bark not appearing papery or peeling, but flaking off; fruit a reddish drupe about 1 cm long, nearly spherical, with somewhat pointed mucronate apex, dehiscing by 2 valves.

Uses: same as for *C. africana.*

Commiphora multijuga (Hiern) K. Schum.
Rodin 9196

Observed at Ruacana Falls, the only species observed with pinnately compound leaves. Bark does not peel but appears smooth and brown (Merxmüller, 1966–72, says it is gray), leaves and stems permeated with pleasantly aromatic resin; spherical fruits about 1 cm in diameter, dehiscing to reveal red arillate seeds. This not recognized; no use was known by my Kwanyama informants.

CACTACEAE

Opuntia ficus-indica (L.) Mill.
Rodin 9029

Common names: prickly pear, cactus apple.

Kwanyama: *omukaigana, omikaigana* (pl.) for plant; *ekaigana* for fruit.

Description: succulent shrub-like plants with jointed flattened stems, to 2 m high; areoles in axils of small early-deciduous leaves, bearing barbed glochids, and usually spines and wool; spines whitish, unequal, usually to 2.5 cm long; flowers yellow or red, sepals fleshy; fruit ovoid, 5–8 cm long, covered with clusters of short glochids and spines, yellowish or purple.

Uses: fruit eaten raw after brushing off spines.

Introduced by missionaries, now commonly planted near kraals for its edible fruit. Native to America.

CAMPANULACEAE

Wahlenbergia lateralia Brehmer
Loeb 168 (identical with *Dinter 7294*)

Kwanyama: *okanyaketela, ounyaketela* (pl.); formerly *okanjaketela.*

Description: erect annuals 20–40 cm high; leaves linear to linear-lanceolate, to 50 mm long, 3 mm wide; campanulate flowers about 5 mm long; ovary subglobose; capsule loculicidally dehiscent.

Uses: unknown.

Identified for Loeb in 1948 as *W. schoenfelderi* by PRE on basis of unpublished Dinter manuscript.

CAPPARIDACEAE

Cleome angustifolia Forsk. subsp. *diandra* (Burch.) Lars.
Rodin 8950 (near Etosha), *9200* (Ruacana)

Kwanyama: unknown.

Description: erect annual to 3.3 m high, leaves palmately compound with 3–9 linear leaflets, stem and leaves covered with fleshy prickles; flowers golden yellow, petal bases red, Merxmüller (1966–72) says purple at base, with 2 long refelexed stamens, ovary long-stipitate, capsule 5–10 cm long.

Uses: unknown.

Cleome hirta (Klotzsch) Oliver
Rodin 8951 (southern Ovamboland), *8983, 9107, 9179* (Ruacana)

Kwanyama: *embodi,* general term for low herbs.

Description: erect annual 1.7–2 m high; leaves palmately compound, with linear to linear-lanceolate leaflets, 30–50 mm long, 2–4 mm wide; foliage and pods viscid, resinous scented; flowers orchid, ovary long-stipitate; capsule elongate.

Uses: not used.

Cleome rubella Burch.
Rodin 9035

Common names: mooinooientjie, wildebosganna.

Kwanyama: *embodi,* general term for low herbs.

Description: suberect annual to 30 cm high; leaves palmately compound with 5–7 (rarely 9) linear to linear-elliptical leaflets; ovary long-stipitate in an orchid flower; capsule dehiscent by 2 sutures. Neither glands nor resins in this species.

Uses: eaten by goats and cattle.

Gyandropsis gynandra (L.) Briq.
Rodin 8924; Loeb 96, 99, 482

Common names: Kaffir cabbage, vingarblartee.

Kwanyama: *ombidi*; my informant spelled it also *omdidi* (Roland Kalitu).

Description: herbaceous annuals to about 60 cm high, branching, and somewhat glandular-pubescent on branches and leaves; leaves palmately compound, with mostly 5 short-petiolate leaflets, narrowly ovate to lanceolate, usually dentate; flowers slightly zygomorphic, simply racemose, white or faintly orchid; fruit long-stipitate, viscous, capsule 6–7 cm long, dehiscing along 2 sutures. Very common weed in cultivated areas in rainy season.

Uses: 1. Leaves boiled as potherb, usually eaten with salt as "relish" for evening meal of millet porridge (*omahangu*). Has slightly bitterish taste, and is more fibrous than some other potherbs. 2. Extra cooked leaves made into small flat cakes and dried on roof for use during dry season when greens unavailable. Dried cakes, *omavanda,* were translated by my informants as "dried cabbages." One of most commonly used plants for *omavanda* other than Ovambo beans (*Vigna*).

Watt and Breyer-Brandwijk (1962) state that it is eaten by Bushmen.

Maerua juncea Pax subsp. *juncea*
Rodin 9340

Cleome juncea Sparm non Ber.
Cadaba juncea Hook. f.
C. aphylla Wild

Common names: bobbjaarnam, roorstorm(bos), swartstorm(bos), slangencierbusch.

Kwanyama: *ondjaiya*, formerly *ondjaja*.

Description: woody vine with trifoliate or rarely simple leaves, leaflets lanceolate, apical leaflet 3–4 cm long, petioles about 1 cm long, some vines appear nearly leafless; flowers white, stamens numerous, sepals united to form distinct tube on androgynophore; ovary stipitate, barely exceeding petals; fruit an ellipsoidal berry about 4 cm long.

Uses: twigs crushed and put into water troughs carved out of palm trunks, to protect cattle from anthrax.

Maerua schinzii Pax
Rodin 8965

M. angolensis auct. non DC.

Common names: kwarda, lammerdrol, quarda.

Kwanyama: *omupopola, omipopola* (pl.), *oshihamupolo* according to LeRoux (1971).

Description: shrub or small tree to 7 m high, leaves simple; genus distinguished by possession of 4 valvate sepals connate into tube at base; flowers white; petals not exceeding sepals, androgynophore equaling or longer than floral tube; ovary stipitate, the dry, apparently indehiscent capsules break readily at constrictions between seeds.

Uses: 1. Leaves stamped and smelled for headache. 2. Leaves and twigs eaten by cattle and goats. 3. One of sacred witch plants placed over opening of kraal to keep out evil spirits (Loeb et al., 1956). See *Leonotis dysophylla*. Such practices are being lost along with other rites involving magic as native doctors are replaced with medical doctors.

Caryophyllaceae

Polycarpaea corymbosa (L.) Lam.
Rodin 9315; *Loeb 175, 527*

Kwanyama: *okapembe, oupembe* (pl.) [little-white-hair-showing]. Also see *Laggera stenoptera*.

Description: erect annual often unbranched herb to 3 cm high; leaves opposite or appearing whorled; stipules papery; sepals variable, silvery-white to brown about 2 mm long; petals pink, shorter than sepals; capsule elliptical 3-locular ca. 1.5 mm long, 5–13 seeded.

Uses: 1. Infusions used for enemas. 2. Common food for cattle and goats.

Celastraceae

Maytenus senegalensis (Lam.) Excell
Rodin 8968, 9316; *Loeb 56* (*173* K)

Gymnosporia buxifolia (L.) Szyszl.

Common name: pendoring.

Kwanyama: *oshingodwe, oingodwe* (pl.) formerly *oshingodue*.

Description: often straggly shrub to ca. 2 m high; leaves variable in size and shape, margins finely dentate, cuneate, axillary stems forming sharp spines 3–6 cm long, often bearing leaves and sometimes flowers; flowers small, white, cymose, capsules containing seeds with thin oblique fleshy aril covering their basal half.

Uses: 1. Leaves stamped, put into water; single drop placed in eye for eye diseases. Considered very strong medicine. 2. Spiny stems cut and used to fence gardens, or grown as protective fence.

Salacia luebbertii Loes.
Rodin 2659, 9323; *Loeb 56*, (*173* K only), *269, 330*

Common name: wildelemoentjie.

Kwanyama: *okandongodongo, oudongodongo* (pl.) (*Rodin 9323*), *okadimbwena* (Loeb); first name preferred, although both used.

Description: shrub 1 m high, much branched from base; leathery leaves elliptical to linear-lanceolate, bright green and shiny on both sides, 3–6 cm long, entire; flowers borne singly in leaf axils; fruit an orange berry 3.5–5 cm in diameter with one or more seeds, growing low on branches.

Uses: fruit eaten raw.

Loeb 269 and *330*, *Rodin 2659* were misidentified in 1948 as *Cassine aethiopica*, revised by Merxmüller (1966–72).

Chenopodiaceae

Chenopodium ambrosioïdes L.
Rodin 2681, Loeb 536

Common name: Mexican tea, galsiektebossie, stinkblaar, stinkbossie.

Kwanyama: *santamaria* or *santamariya*: Portuguese name used and plant probably introduced by them; used by Ovambos in Angola just to north. Not previously reported in Ovamboland by Merxmüller (1966–72).

Description: herbaceous annual 0.6–1 m high;

leaves green, lanceolate or oblong, lower pinnately lobed, mostly glabrous, but sometimes glandular or tomentose when young; inflorescence of numerous axillary spikes or umbels, ca. 1 cm long bearing small yellow-green flowers; achene enclosed by calyx. Plant has rank, pungent odor.

Uses: planted in kraals as snake repellant (Loeb et al., 1956).

Common weed around kraals during latter part of dry season. Watt and Breyer-Brandwijk (1962) report it has been used medicinally by tribes in several parts of southern Africa, primarily as an antihelminthic, because it contains oil of chenopodium. Its use and toxicity vary so that it may cause headache, dizziness, depression, nausea, internal bleeding, and liver damage.

Chenopodium sp.

Loeb 182 (*430* K)

Kwanyama: *okalyani, oulyani,* formerly *okaliani* [little-eater] (Loeb's name), *okalilifa, oulilifa* [makes-children-cry]; latter is preferred today. The name infers that the flower stings when touched, but genus not known to have stinging hairs.

Description: sterile herb about 15 cm high, immature and/or depauperate, possibly *C. amboanum* or *C. olukondae* (already known from area), in immature form similar to *C. album,* which is commonly called pigweed in North America.

Uses: Loeb (1962) refers to "Pigweed' (possibly this species) as being used as boiled potherb from which *omavanda,* dried flat cakes, usually called "dried cabbages," were made. Formerly these cakes were carried to wars as food.

Lophiocarpus polystachys Turcz.

Loeb 516

L. burchellii Hook. f.
Microtea burchellii (Hook. f.) N.E. Br. Now considered endemic to South America.

Common name: sandaalbossie.

Kwanyama: *oshihamutende, oihamutende* (pl.) [spread-like-an-elephant-foot], formerly *osihamutende.*

Description: erect herbaceous annual bearing long slender spikes of greenish-yellow flowers. Genus characterized by flowers in 3s subtended by bract; leaves linear, reddish, 3 cm long by 1.5 cm wide; this species distinguished by 8-ribbed pericarp and small intercostal tubercles. Genus was placed in Phytolaccaceae by Hutchinson (1946) and Merxmüller (1966–72).

Uses: unknown.

Lophiocarpus tenuissimus Hook. f.

Rodin 8984

Kwanyama: *omukonati.*

Description: erect annual to 50 cm high, very similar to last. Perianth with green bracts, stamens yellow, some stems and leaves reddish, the latter linear to 3 cm long, 1 mm wide. Distinguished from last by lack of fruit ribs but fruit warty-tuberculate throughout.

Uses: whole fresh aerial shoot (not roots) boiled, and a tea drunk to stop nosebleed (from Phillipus Paulus).

COMBRETACEAE

Combretum, a large and varied genus in southern Africa, has usually 4-, rarely 5-winged pods, and a corolla. *Terminalia* has 2-winged (or nearly wingless) pods and no corolla.

Combretum albopunctatum Suesseng.

No voucher

Kwanyama: unknown, but probably close to *omulama,* used by two Ovambo linguistic groups, the Ngandjera and the Kwaluudhi, which have a close similarity to Kwanyama for many plant names.

Description: shrub 3 m high; leaves elliptical to broad-elliptical, 2–6 cm long, lower side covered by small silvery bowl-shaped scales; corolla 4-parted, hypanthium bowl-shaped with long funnel-form tube, disc inconspicuously hidden; fruit 4-winged, orbicular, to 2.5 cm long.

Uses: knobkerries are made from it (LeRoux, 1971).

Combretum apiculatum Sond. subsp. *apiculatum*

Rodin 9001, 9018, 9150 (Rundu), *9309*

C. leutweinii Schinz

Common names: bush willow, rooiblaas.

Kwanyama: *omunaluko, ominaluka* (pl.) [stick-to-stir-porridge].

Description: shrub or tree to 10 m high, bark reddish-brown; leaves coriaceous, shiny, elliptical to ovate, apex commonly acute to mucronate, 2–10 cm long; flowers 4-merous, floral tube bowlshaped, long funnel-form; pods 4-winged

1.2–2.5 cm long, 1–2 cm across, green or reddish in my collections (*Rodin 9018*), but Merxmüller (1966–72) says they are yellowish.

Uses: 1. Sticks made for stirring porridge; end put in pot somewhat flattened, but handle carved round. 2. Pointed poles of this species are partly embedded in ground to form fences, as for palisade walls of kraal. 3. Wood used for fuel in cooking although leaf bases of fallen palm fronds more commonly used. 4. Gourds used as butter churns are reinforced with small branches.

Combretum celestroïdes Welw. ex Lawson
Rodin 9308

Kwanyama: unknown.

Description: tree to 7 m high, or sometimes shrubby; leaves ovate to elliptical 3–8 cm long, scaly beneath, scales round, entire, 0.15–0.35 mm in diameter; flowers 4-merous, white or yellow, tube only slightly developed; fruit 4-winged, reddish, 1.5–2 cm in diameter (Merxmüller, 1966–72, says at least 2.5 cm long).

Uses: unknown, but probably used for fuel.

Combretum collinum Fresen. subsp. *suluense* (Engl. & Diels) Okafor
Rodin 2607, 8912, 9139, 9147

Kwanyama: *omupupwaheke, omipupwaheke* (pl.), formerly *omupupuaheke*; sometimes contracted to *omupupu* (Philemon).

Description: tree about 8 m high, bark rough, gray; leaves elliptical, whitish pubescent beneath, light green above; fruit 4-winged about 32 mm long, brown; wood not termite resistant.

Uses: used for fences and kraal construction, but less strength than mopane, *Colophospermum mopane* (*omufyati*) and less desirable because susceptible to termite damage.

Combretum engleri Schinz
Rodin 9119, 9305

C. parvifolium Dinter

Kwanyama: *omulondaxuxua, omilondaxuxua* (pl.), formerly *omulondahuhua*.

Description: shrub about 2 m high; bark smooth, gray; leaves elliptical to lanceolate-elliptical, apex sub-acuminate to blunt, to 4.5 cm long; flowers small, in spikes to 1.5 cm long; fruit 4-winged about 3.5 cm long by 2.5 cm wide notched at apex, yellowish, sometimes reddish. A rare species.

Uses: 1. Used for carving cups and knife handles or sheaths. 2. Thin branches are woven around large calabashes to make carrying easier. 3. Thin branches are used in coil baskets, especially large ones, at upper rim to stiffen baskets (LeRoux, 1971).

Combretum hereroënse Schinz var. *hereroënse*
Rodin 9149, 9322; Loeb 9 (Det. PRE)

Common names: steelboom, hardekool, loodhout (boom).

Kwanyama: *omukadikuku, omikadikuku* (pl.). See *C. imberbe.*

Description: tree 7 m high; dark gray bark fissured lengthwise, some strips peeling off; leaves obovate or oblanceolate up to 3.5 cm, light green with distinct lower veins, finely tomentose; pods 4-winged about 2 cm long by 3.5 cm across, yellowish to brown.

Uses: poles for kraal fences; considered to be better than some other species.

Combretum hereoënse Schinz var. *villosissima* Engl. & Diels
Rodin 9151 (Rundu) (Det. PRE)

Kwanyama: unknown.

Description: small tree up to 7 m high; leaves whitish-tomentose; pods 4-winged, ca. 15 mm long, tan-colored.

Uses: unknown, but, like the foregoing, probably used for kraal fences.

Combretum imberbe Wawra
Rodin 2630, 8918, 8943; Loeb 325, 451

Common names: leadwood, hardelkool-(boom), menshout, omumborumbonga (derived from Herero according to LeRoux, 1971).

Kwanyama: *omukadikuku, omkadikuku* (pl.) [female] given this name because lacks spines (*Rodin 8919*); *omukuku, omikuku* (pl.) the name applied when the tree bears no spines, as given by my informants (*Rodin 8943*).

Description: tree up to 8 m high or higher; bark gray-brown, rough, deeply fissured in older trees; leaves variable, ovate-elliptical to obovate, apex rounded to subtruncate to mucronate, without hairs but with silvery scales on both surfaces; flowers greenish with white stamens, very small, in racemes about 5 cm long; pods 4-winged, turning from green to brown, 1–1.7 cm long; lateral shoots sometimes are spinescent. Wood quite hard and not attacked by termites.

Uses: 1. Branches of spiny form used for outer

cattle enclosure of cut thorn bushes. 2. Larger straight stems used for constructing embedded kraal fences and huts; considered stronger than other species. 3. Medicine, obtained from the roots, for stomachache. Roots pounded to extract sap, which is then drunk with water. 4. The medicine man carries two horns, one of which contains magic herbs, which include the ground leaves and fruit of this plant (Loeb et al., 1956). 5. One of the five plants in Ovamboland containing an edible gum. The others are *Acacia hebeclada, Burkea africana, Terminalia sericea* and one unidentified plant called *omulyamenye,* formerly *omuljamenje. Acacia giraffae* also has an edible gum. According to LeRoux (1971) this particular species exudes in September a sap that is considered a delicacy; similar edible gum is obtained from *C. zeyheri.* 6. Wood used as firewood and wood coals to heat flatirons (LeRoux, 1971).

Combretum mechowianum O. Hoffm.
Rodin 9310

C. coriaceum Schinz

Kwanyama: *omupupuwaheke, omipupuwaheke* (pl.). See *C. collinum.*

Description: tree 8 m or more high, bark rough and deeply fissured; leaves variable, lanceolate to suborbicular, 6–12 cm long, lower surface covered with silvery scales often almost hidden by heavy tomentum; flowering spikes about 4 cm long in panicles; pods 4-winged, 3–4 cm long, rusty-reddish (although White, 1962, says wings are yellowish), covered with rusty scales. Wood not termite resistant.

Uses: 1. Roots chewed or stamped and made into tea drunk for coughs. 2. Sometimes used for kraal fences, but less strength and termite resistant than mopane, *Colophospermum mopane.*

Combretum psidioïdes Welw. subsp. *dinteri* (Schinz) Excell
Rodin 8978

Kwanyama: *omalo* (from informant), *omutyenhye, omityenhye* (pl.) from LeRoux (1971).

Description: tree 8 m high; bark dark gray, rough-fissured; leaves variable, lanceolate to elliptical 7.5–11 cm long, both veins and lower leaf surface pubescent; flower spikes borne singly in axils of reduced leaves, up to 10 cm long; fruit 4-winged, deep red especially when young, about 3 cm long, shallowly notched at apex.

Uses: 1. Powdered bark put into the first-made marula wine (from *Sclerocarya caffra* fruits) to give special flavor. 2. Powdered bark sometimes used on cooked potherbs as special flavoring, similar to salad dressings.

Combretum psidioïdes subsp. *psidioïdes*
Rodin 8947

Kwanyama: *omalo* (from Roland Kalitu), *omutyenhye, omityenhye* (pl.) from LeRoux (1971).

Description: tree about 8 m high, superficially like subsp. *dinteri,* but distinguished by heavy pubescence occurring only on larger veins, and rarely or only sparsely between veins.

Uses: same as for subsp. *dinteri.*

Combretum zeyheri Sond.
Rodin 2608, 8945, 9148 (Rundu)

C. oblongum F. Hoffm.

Common names: blaasklapper, kierieklapper, peulboom, raasblar, rooibos.

Kwanyama: *omushendye, omishendye* (pl.), formerly *omushendje.*

Description: tree about 10 m high with pale-brown, rather smooth bark; leaves bright and shiny, oblanceolate to elliptical or oblong up to 14 cm long, pubescent when young, becoming glabrate; axillary flowering spikes 3–6 cm long, pods 4-winged, notched, yellowish-brown, up to 7.5 cm long (largest pods of any *Combretum* species in Ovamboland). Wood not termite resistant.

Uses: 1. Wood used for kraal fences and huts, but not as good or strong as mopane, *Colophospermum mopane.* 2. Loeb et al. (1956) stated *omushendye* used by returned warriors as sign of honor and taboo. Warriors must be given presents by all whom they meet, and are considered during this period to be in transitional stage of purification after battle. 3. Brides' wedding bands or belts woven from twigs (Loeb et al., 1956). My informant stated that roots rather than stems used for these belts: two fit around the hips, and two similar ones are around neck, and sets of them on left arm to elbow. These hoop-like bands worn from end of puberty rites, through marriage rites at husband's kraal, and for one month afterward. Witnesses must provide gifts or else avoid her. 4. One who has killed a turkey buzzard (*epumumu*) must wear roots and give hyena cry in bush every morning, and must eat and sleep

alone until purified by being rubbed with water and herbs by sorcerer (Bruwer, 1961). 5. Wet wood used as firewood to bring good luck (LeRoux, 1971). 6. Gum secreted in September, eaten, considered delicacy (LeRoux, 1971).

Terminalia prunoïdes Lawson
Rodin 2639, 9116, 9321

Common names: hardekool(boom), sterkbos, vaalbos.

Kwanyama: *omuhama, omihama* (pl.) preferred, but *omunghama* (*Rodin 9116*) also used.

Description: tree to 9 m high; bark grayish; leaves crowded on spur shoots, gray-green, obovate, usually 6 cm long or shorter, glabrous, apex rounded; flowers distinctly pedicellate, crowded in racemes up to 8 cm long; fruits flattened, 2-winged, about 6 cm by 3.5 cm, notched at apex, deep red and glabrous. Wood light but strong.

Uses: 1. Trunks used for kraal fences. 2. Knobkerries made from wood. 3. Wood used for wagon tongues. 4. Toy bow and arrows made for children from this species. 5. Belts made from bark, especially for boys pants or formerly their aprons made from hides. 6. Forked sticks to support main kraal entrance. If this species unavailable, second choice is *Peltophorum africanum* (*omupalala*), or *Colophospermum mopane* (*omufyati*).

Terminalia sericea Burch.
Rodin 2619, 2702, 8911

Common names: bloubos, geelhout(boom), sandvaalbos, silwerboom.

Kwanyama: *omwoolo, omyoolo* (pl.), formerly *omuola, omiolo* (pl.) or *omuoolo.*

Description: bush or tree to 10 m high; bark gray-brownish, deeply fissured; leaves elliptical to oblanceolate, apex usually acute, sometimes mucronate, silky when young, glabrous but light green when older; white flowers borne in axillary racemes about 7 cm long; pods flattened, 2-winged, notched at apex, elliptical up to 3.5 cm by 5.5 cm, green or light pinkish when mature, white pubescent. Wood termite-proof.

Uses: 1. Poles for kraal fences and huts considered to be equal in quality with mopane (*Colophospermum mopane*). 2. The strong bark torn into strips and used to tie together frames of houses and in other construction. 3. Grain-storage baskets (*omaanda*) sometimes made of it, if mopane unavailable; this use now quite common. About 45 cm above ground on poles. 4. Preferred hoe handles (Fig. 6). 5. Loeb et al. (1956) listed this as one of the five trees sacred to royalty because supposed to turn away wrath of king. See *Colophosphermum mopane* (*omufyati*). 6. One of five trees Loeb et al. (1956) named as producing edible gums. See *Combretum imberbe* for details; for poisonous gums see *Albizia versicolor.* 7. Roots boiled, cooled, and infusion given as enema to relieve menstrual cramps (menstruation = *komuedi*). 8. Powdered bark added to food to neutralize possible poison (Sckär, 1916). 9. Bark fashioned into necklace and belt for infant's naming ceremony. Father swings the child under his legs two times, then handing the child to the mother says, "This is your child. His name is ———." The name which has been kept secret is revealed to all at that time (Hahn, 1928).

According to White (1962) stems used for building poles and stamping blocks, and inner root bark for making rope in Zambia.

COMMELINACEAE

Commelina africana L.
No voucher, but observed

Kwanyama: *elamba.* See *C. forskalaei.*

Description: small creeping annual herb; leaves ovate, sessile, 3–5 cm long, leaf sheaths 1.5–2 cm long, ciliate; flowers bilateral in cymes enclosed by green spathe, usually flowering singly, flowers bright golden yellow, 2 large showy petals above, one small one below, stamens 6, of which 3 are fertile; fruit 1-seeded, indehiscent.

Uses: food for turtles.

Commelina forskalaei Vahl
Rodin 8952, 9068; Loeb 489

Kwanyama: *elamba.* See *C. africana.*

Description: annual herb similar to *C. africana,* but leaves undulate-margined and flowers bright blue.

Uses: food for turtles.

COMPOSITAE

Only some general characters, together with some specific features that may assist recognition of genus or species are given.

Acanthospermum hispidum DC.
Rodin 9218

Common names: upright star bur, donkieklits, kleinkankerroos.

Kwanyama: *okanokahandja.*

Description: annual not over 0.5 m high; leaves ovate with delicate teeth; involucre spiny; eradiate, yellow disc flowers only. Somewhat resembles *Geigeria.*

Uses: unknown.

Bidens biternata (Lour.) Merr. & Sherff
Rodin 9111

Coreopsis biternata Lour.

Common name: bur marigold.

Kwanyama: unknown.

Description: erect annual; leaves pinnately compound with coarse teeth; heads with yellow disc flowers and marginal ray flowers; pappus with 4 barbed bristles, which stick to clothing and fur.

Uses: unknown.

Blumea gariepina DC.
Rodin 2680, Loeb 252, 299, 314

Kwanyama: *edimba lekadi, omadimba omakadi* (pl.) [smelling-female-plant]. Also see *Pluchea,* and *Conyza* for *edimba,* a term for herbs.

Description: stems winged; flowers yellow. Genus distinguished by caudate anthers and rigid involucral bracts.

Uses: herbage heated and applied as facial poultice to relieve colds (Loeb et al., 1956). Watt and Breyer-Brandwijk (1962) reported that Swazis have used it medicinally, and that it contains several active ingredients: cineol, d-fenchone, and citral, the total volatile oils making up 5% of the plant tissue.

Has been included in genus *Laggera* at times.

Conyza sp.
Loeb 511

Kwanyama: *edimba* (general name for herbs). See also *Blumea* and *Pluchea.*

Description: small plants with many-flowered heads with central disc and marginal ray flowers; anthers linear, obtuse at base; pappus of several scabrid bristles; involucre subglobose to campanulate, with about 5 rows of linear bracts.

Uses: unknown.

Only *C. aegyptica* (L.) Aiton has been reported in Ovamboland in Merxmüller (1966–72).

Dicoma cf. *D. membranacea* S. Moore
Loeb 232

Kwanyama: *oshikanda shonghoshi, oikanda shonghoshi* (pl.) [pad-of-paw-of-a-lion]. For *oshikanda,* also see *Aptosimum* and *Oxygonum alatum.*

Description: herb; leaves linear, ovate or elliptical, tomentose; central disc flowers all male, ray flowers fertile, perfect, purple; involucre campanulate, of 6–11 rows of lanceolate, pungent, glabrous bracts.

Uses: unknown.

Dicoma tomentosa Cass.
Rodin 8972, 9318; Loeb 475 (130 K)

Kwanyama: *okalupulupulu.*

Description: annual 60 cm high; leaves linear to lanceolate, upper surface glabrous, heavily tomentose beneath; disc flowers only, orchid fading to cream; involucre thistle-like, white-spiny.

Uses: tea made from whole plant given children for stomachache (from Johannes K. Oska, 104 km east of Oshikongo).

Epaltes gariepina (DC.) Steetz?
Loeb 89 (90 K)

E. alata (Sond.) Steetz

Common name: blougifbossie.

Kwanyama: *odivadiva, edivadiva* (pl.) [in-a-great-hurry].

Description: much-branched, woody-based perennial; leaves long and linear, mostly entire; heads small and inconspicuous, lilac colored, 3–6 mm in diameter, marginal flowers 3-lobed, central flowers 5-lobed, in umbel-like panicles; involucre campanulate, 4–7-rowed; pappus absent.

Uses: 1. Leaves roasted, powdered, mixed with butter (presumably unsalted), and smeared into open syphilitic wounds; treatment said to be painful (Loeb et al., 1956). 2. Magic soap, "the king's ointment," made from mixture of powdered plant, millet flour, and water, used to clean king's body (Loeb et al., 1956).

Watt and Breyer-Brandwijk (1962) claimed plants toxic to livestock in late season.

Erlangea misera S. Moore
Loeb 215, 336 (Det. PRE, 1948)

Kwanyama: *ombishu, eembishu* (pl.) [raw].

Description: erect herb; leaves sessile, lanceolate, finely toothed to entire, minutely pellucid-punctate; inflorescence a lax corymb; heads of

orchid-colored disc flowers only color, involucre campanulate, 4–5 rows of imbricated ovate to lanceolate phyllarics, acute to acuminate, pubescent, glandular.

Uses: given to children to relieve vomiting and fever (Loeb et al., 1956).

Erlangea schinzii O. Hoffm.
Rodin 9387

Kwanyama: unknown.

Description: annual 30 cm high; upper leaves lanceolate to ovate, the lower semi-cordate, subentire; inflorescence an umbel-like panicle, heads 10–15 mm across, purple disc flowers only.

Uses: leaves stamped, boiled, and cooled.

Geigeria schinzii O. Hoffm. subsp. *schinzii*
Rodin 9219, 9314

Kanwayama: *ongonyo, eengongo* (pl.) [clenched-fist], formerly *ongonjo*. Loeb mistakenly called *Geigeria*, "*onghongo*," which is marula nut. See also *Hirpicium*.

Description: erect shrubby herbs about 40 cm high, much-branched from base; linear-elliptical leaves up to 9 cm long, 3–7 mm wide; flowers in the leaf axils; marginal ray flowers yellow, 3-toothed, yellow disc flowers perfect and sessile, pappus of 10 broad scales.

Uses: 1. Thought by Loeb et al. (1956) to be one of the herbs used as protection against rabies. See *Dissotis* or *Cordia ovalifolia* as rabies preventatives. 2. My informant stated tea from leaves given babies with tetanus, to relax them. 3. Loeb et al. stated (1956) that *onghongo* or *okashishilila* (formerly *okasisilila*) are used as charms to improve marksmanship by hunters. It is uncertain whether his *onghongo* refers to this plant or to marula nut. Sorcerer powders plant, adds beakpoint and brain of duck, humped black-billed goose, or red-billed goose. Roasted mixture is rubbed into five perpendicular cuts on upper and lower sides of both wrists and on upper right shoulder, as well as into hunter's eyes so he will never miss his mark with arrow or gun.

Helichrysum leptolepis DC.
Rodin 9069; Loeb 401

Kwanyama: *onapa* (*Rodin 9069*); *oshitendadikwa,* formerly *oshitendadikua,* also *okatendadikwa*; [oka = small or diminutive], [okikwa = carrying-skin-for-children].

Description: erect herbaceous perennial; leaves mostly lanceolate, entire, woolly-pubescent; heads semi-spherical, with about 100 florets; involucral bracts papery, translucent, pink to reddish, and retaining their color and texture in drying.

Uses: leaves and young stems eaten raw.

Hirpicium gorterioïdes (Oliver & Hiern.) Roessler subsp. *schinzii* (O. Hoffm.) Roessler
Rodin 9216, 9229

Kwanyama: *ongongo*. See also *Geigeria schinzii*.

Description: annual about 15 cm high; basal leaves rosulate, pinnatifid, upper leaves undivided, all are tomentose; disc and ray florets yellow; inner involucral bracts 3 mm longer than florets.

Uses: leaves ground and boiled to make tea for upset stomach.

Determined by Giess as subsp. *gorterioïdes* which differs chiefly in lacking a basal leaf rosette.

Kleinia sp. cf. *Kleinia longiflora* DC.
Rodin 8946, 9048; Loeb 109

Senecio longiflorus (DC.) Schultz

Common name: sambokbos(sie).

Kwanyama: *oshinanganamwali, oinanganamwali* (pl.) [look-after-the-mother-with-newborn-baby]. Also *okatendadikwa* [*odikwa* = carrying-skin-for-children].

Description: stout succulent stems up to 1 m high, branching mostly from base; leaves slightly succulent, oblanceolate about 5 cm long, 3–4 cm wide, deciduous in the dry season; heads with disc florets only. A common plant.

Uses: 1. Stems boiled and infusion drunk to cause vomiting, or crushed in cold water for same effect in cases of poisoning. 2. Planted in kraal over the place where afterbirth is buried to keep away evil spirits, a custom still followed by many Christians (Canon Gabriel Nameuja). 3. Plants heavily grazed by goats during dry season. 4. Twigs of this and three other sacred plants walked over as part of ceremony before occupation of new kraal. See *Aloë esculenta* for other species (Loeb, 1955a–c). 5. Loeb (1955a) reported that, after the death of husbands, wives drink potion made from this plant, but this seems doubtful because of toxic effect of latex and its emetic qualities.

Lactuca sp.
Rodin 9386 (sterile); *Loeb 290*

Common name: wild lettuce.

Kwanyama: *etalakeka, omalakeka* (pl.), used only rarely [makes-you-cool], also: *etalaleka.*

Description: herbs to 18 inches high from deep taproot, leaves obovate, dentate; heads of ligulate yellow florets, only; achenes long-beaked, stems and scapes contain white latex.

Uses: 1. Made into tea for stomachache. 2. Tea from leaves drunk by pregnant women to keep them cool. 3. Cited by Loeb et al. (1956) as possibly *etalaleka linini,* which yields infusion sprinkled by sorcerers inside kraal to remove poisons. 4. With *etalaleka linini* [*linini* = small] also used as female douche when finely grated and mixed with water (Loeb et al., 1956).

Loeb 515 had some *Lactuca* and some *Sonchus* on the same sheet.

Laggera alata (D. Don) Schultz-Bip.
Loeb 163, 220, 582

Blumea alata D. Don

Common names: katposbossie, muishondbossie.

Kwanyama: *okapembe, oupembe* (pl.). See *Polycarpeae corymbosa.*

Description: erect plant to 2 m high; leaves oblong-lanceolate to elliptical, glandular beneath, decurrent at base; heads viscid-glandular, purplish; phyllaries rigid, often squarrose; anthers caudate.

Uses: infusion used as an enema (Loeb et al., 1956).

Loeb's material originally determined as *L. stenotoptera* O. Hoffm., but this species does not occur in South West Africa.

Nidorella resedifolia DC. subsp. *resedifolia*
Rodin 2677, 9025, 9253; *Loeb 5, 281*

Kwanyama: *efindapya* [thing-which-makes-a-line-of-the-garden]; also *okafetahamba, oufetahamba* (pl.) [little-cleans-the-king], latter name applied only when used in annointing kings (Loeb et al., 1956); formerly *efindapia.*

Description: annual to 1 m high; leaves glandular, linear to oblanceolate, entire or somewhat dentate; inflorescence composed entirely of orange disc flowers, heads compact panicles with very small flowers about 2 mm in diameter. Common kraal weed.

Uses: 1. Dried plant formerly mixed with lion fat and used to annoint kings (Loeb et al., 1956). 2. Grazed on by goats.

Nolettia arenosa O. Hoffm.
Loeb 523

Kwanyama: unknown.

Description: small shrubs, leaves linear, stiffly or bristly pubescent, ca. 2 cm long; both disc and ray flowers, yellow, perfect, rays very narrow, flowers solitary on long peduncles.

Uses: unknown.

Pechuel-Loeschea leubnitziae (O. Kuntze) O. Hoffm.
Rodin 9388; Loeb 54, 251

Pluchea leubnitziae O. Kuntze

Common names: stinkbush, bitterbos(sie).

Kwanyama: *edimba* (*Rodin 9388*), *edimba lendume, omadimba mandume* (*Loeb 54, 251*) (pl.) [smelling-male-plant]. For *edimba* see *Blumea gariepina.*

Description: suffrutescent herb to 2 m high; leaves linear-lanecolate, gray green from very fine pubescence, entire margin; numerous flowers in leafy panicles, light orchid color, bisexual, disc and ray flowers present, involucre imbricated with several rows of bracts, flowers very small, 1–several flowers on short axillary branches throughout upper part of plant forming a loose panicle. Not reported from Ovamboland by Merxmüller (1966–72).

Uses: 1. Powdered, boiled, and drunk as tea in wine for fever called *omuela.* 2. Plant heated over fire and fumes inhaled to relieve colds (Loeb et al., 1956).

Pegolettia senegalensis Cass.
Loeb 564 (*565* K)

Kwanyama: *okambodi, oumbodi* (pl.) [little-herb]. See also *Pistia stratiotes,* and *Heliotropium ovalifolium.*

Description: weakly branched herb 45–60 cm high; leaves few, linear or linear-oblong, always more than 10 mm long and less than 3 mm wide; heads discoid, 8–12 mm high, yellow, but sometimes wine-red; pappus plumose.

Uses: unknown.

Pegolettia sp.
Loeb 224

Kwanyama: *olutope, omalutope* (pl.), same meaning as *olupunga*. See also *Eragrostis superba* and *Panicum kalahariense*.

Description: shrubby plant to 45 cm high, leaves variable; heads broadly campanulate, involucre 3–4 rows, disc flowers only, widening at top, pappus in two rows.

Uses: unknown.

Sonchus cf. *oleraceus* L.
Loeb 515a

Common name: sow thistle, melkdissel, pypdissel.

Kwanyama: possibly *etalaleka linini* [*laleka* = small] because on same sheet as *Loeb 515*, which is *Lactuca* sp., with only one Kwanyama name given.

Description: herbaceous annual, 30 cm to 1 m high; deep tap root; leaves 7–20 cm long, pinnatifid, denticulate or toothed, the terminal segment commonly larger and more triangular than other lobes, base sagittally clasping the stem, or lowest leaves petioled, inflorescence a corymb, heads swollen or jug-shaped, flowers composed entirely of yellow ligulate flowers. Distinctive because one of few Compositae with evident white latex in Ovamboland.

Uses: unknown.

Immature plants growing in kraals in 1973; Loeb's specimen also sterile.

Sphaeranthus sp.
Loeb 279, 360, 577

Kwanyama: *inayolutope, ooinayolutope* (pl.) [mother of olutope], formerly *inajolutope*.

Description: erect herb; heads clustered into a globose, bract-subtended clump.

Uses: powdered leaves used by women as under-arm deodorant (Loeb et al., 1956).

Vernonia glabra (Steetz) Vatke var. *ondongense* (Klatt) Merxm.
Rodin 8975

Kwanyama: unknown.

Description: branched perennial 1.2–1.75 m high; leaves sessile, oblanceolate to obovate, margins bluntly dentate; heads campanulate, corymbose, long-pedicellate, with up to 20 tubular bright blue florets; involucre 4–10 rowed; pappus bristly, 2-rowed.

Uses: unknown.

Genus undetermined
Rodin 9389

Kwanyama: *ongonyo*. See also *Geigeria schinzii* and *Hirpicium*.

Uses: upper parts stamped and boiled to make tea for upset stomach.

Convolulaceae

Evolvulus alsinoïdes (L.) L. subsp. *leptostachya* (DC.) Brummitt var. *pubescens* Baker
Rodin 9080, 9220

Kwanyama: unknown.

Description: perennial vine; leaves linear, acute; flowers open-campanulate, blue.

Uses: unknown.

Rodin 9220 (Det. Merxmüller) also collected near Namacunde, Angola, a few miles north of the Angola border, among Kwanyama people.

Ipomoea adenoïdes Schinz
Rodin 8957, 9175

Common name: trompetblom.

Kwanyama: *okanakamudesha* [carrot].

Description: shrub 60–100 cm high, branching at base; leaves simple, entire or few-dentate sagittate especially at the base, obovate or elliptical to almost rounded, somewhat leathery 3–8 cm long and 1–5 cm wide; flowers borne short-pedicellate campanulate, white to pink; fruit nearly spherical, mucronate apex clasped by calyx, often hairy; seeds densely villous. Fruit inedible.

Uses: swollen, water-containing roots (to 2.5 cm in diameter) eaten raw, a use possibly learned from Bushmen, who use many such plants as water source in desert.

Ipomoea batata Poir.
Rodin 9377

Common name: sweet potato, batatisen.

Kwanyama: *oshikapa*.

Description: cultivated vine with spreading stems and fleshy roots, propagated by cuttings; leaves cordate, palmately lobed, petiolate. Said not to flower here; propagated by stem cuttings.

Uses: 1. Roots boiled or roasted and eaten. 2. Leaves occasionally cooked as potherb, but this use more prevalent in neighboring Angola.

Ipomoea bolusiana Schinz
Rodin 8971 (unicate, WIND)

Kwanyama: unknown.

Description: immature prostrate vine with subterranean storage root; leaves palmately compound with linear segments.

Uses: unknown.

Ipomoea chloroneura Hall f.

Rodin 9108 (unicate, WIND)

Common name: morning glory.

Kwanyama: *ehuliueue.*

Description: small climbing vine; flowers white, campanulate on funnel form. Rare.

Uses: unknown.

Ipomoea hackeliana (Schinz) Hall f.

Rodin 9235

Kwanyama: unknown.

Description: vine with several prostrate branches from taproot; leaves 1–4 cm long, ovate to cordate, pubescent; corolla pink, darker in throat, fading; seeds hairy.

Uses: unknown.

Ipomoea sinensis (Desc.) Choisy subsp. *blepharosepala* (Hochst. ex A. Rich.) Verd.

Loeb 13

I. cardiosepala Hochst. ex Baker & Wright

Kwanyama: *okashila konoka* [small-tail-of-the-black-mamba], because shoots resemble tail of snake. See also *Merremia tridentata* subsp. *angustifolia.*

Description: suffrutescent vine; lower leaves cordate or ovate, the lower 2–8 cm long, 1.5–5 cm wide, the upper reduced, margins not undulate, pubescent petioles to 10 cm long; flowers solitary or in few-flowered clusters, at most 15 mm long, on pedicels over 1 cm long, corolla bright pink with darker throat, rarely white; capsule smooth; seeds hairy.

Uses: unknown.

Ipomoea verbascoïdea Choisy

Rodin 9288

Kwanyama: *engamukuiju.*

Description: stout climbing vine from fleshy roots 11–15 cm in diameter; leaves broadly ovate, cordate, sometimes acute ca. 20 cm long, to 20 cm wide; corolla over 20 mm long, pink to purple; capsule glabrous; seeds covered by long white trichomes. Foliage and calyx white or gray-hairy. Story (1958) stated that roots sometimes attain size of football and that Bushmen (living east of Ovamboland) chew or crush them to obtain water. My collection had very succulent taproots 5–6 cm in diameter when collected, with several swollen storage areas on one root. The specimen was in fruit, and my informant may have been in error but remembered the flower as yellow.

Uses: 1. Food for bucks, especially antelope species in the area. 2. Taproot eaten raw.

Jacquemontia tamnifolia (L.) Griseb.

Rodin 9039; Loeb 132, 164, 166

Kwanyama: *okatangaela* (*Rodin 9039*). See also *Merremia tridentata. Inayakutuikuombwa* [mother-of-the-dog's-ear] (*Loeb 166*), *kutuikombwa* [dog's-ear], *okahanhemo, ouhanhemo* (pl.) for the flowers (*Loeb, 164*).

Description: herbaceous annual vine; leaves ovate, cordate, petiolate, 4–8 cm long, 2–6 cm wide; flowers in involucrate clusters, sepals linear-lanceolate, 5–8 mm long, villous; corolla blue, funnelform, distinctly 5-lobed, about 10 mm long; capsule globular, glabrous; 4-seeded.

Uses: herbage crushed, boiled, and the steam inhaled under a blanket to relieve headache.

Merremia tridentata (L.) Hall f. subsp. *angustifolia* (Jacq.) Ooststr.

Rodin 9038; Loeb 178, 179

M. angustifolia (Jacq.) Hall f.

Ipomoea angustifolia Jacq.

Kwanyama: *okatangaela* (*Rodin 9038*). See also *Jacquemontia tamnifolia. Okashila konhoka* [little-tail-of-a-snake] (*Loeb 178, 179*). See also *Ipomoea sinensis.*

Description: herbaceous annual or short-lived perennial vine; leaves linear or linear-lanceolate, 2–8 cm long, 1–5 (or 8) mm wide, auriculate and dentate at base, entire at apex; flowers solitary or in groups of 2–3, pedicels 1–6 cm long, corolla 12–20 mm long, white to yellow (yellow in my specimen); fruit an ovate capsule, usually glabrous; seeds 4, glabrous.

Uses: herbage boiled and steam inhaled to relieve headache. See also *Jacquemontia tamnifolia.*

Dalziel (1937) noted that decoctions of this plant were taken in central west Africa for gonorrhea, and root taken with bran was supposed to provide immunity to scorpion stings.

CRASSULACEAE

Kalanchoë rotundifolia (Haw.) Haw.
Rodin 9384

Common name: nenta(bos).
Kwanyama: unknown.
Description: erect succulent, stems up to 60 cm high; leaves ovate to spatulate, occasionally orbicular, 1–5 cm long, 0.5–2.5 cm wide, cuneate; flowers 4-parted, tubular with flared lobes near apex, bright orange (reported to be brick-red in other areas); stamens 8; carpels 4, fruit a membranous, many-seeded capsule.

Uses: herbage boiled and cooled and infusion placed in ear to relieve children's fevers.

CUCURBITACEAE

Acanthosicyos naudinianus (Sond.) Jeffrey
Rodin 8949; Loeb 384

Citrullus naudinianus (Sond.) Engl.

Common names: wild watermelon, wildewatermoen, gemsbokdommer, hererokokommer.

Kwanyama: *okatangakamufifi, outangakamufifi* (pl.) [little-melon-of-the-ancestral-spirits] or *katangakamufifi.*

Description: perennial vine; leaves 5-lobed somewhat pinnatifid; flowers golden yellow; fruit ovoid, 7.5–10 cm long, covered with fleshy wart-like prickles, dark green, very bitter. Very common in southern Ovamboland. My collection lacked the cauline spines as described by Merxmüller (1966–72).

Uses: 1. The bitter fruit not eaten in Ovamboland, but said to be sometimes cooked and eaten by Bushmen. 2. Seeds dried for use as beads. 3. Loeb et al. (1956) reported juice of fruit extracted, mixed with water, and given as enema for gonorrhea. Only a small amount could be used because of strong purgative action, which caused heavy urination supposed to wash out penis. My informant and those he queried did not know of this remedy in 1973.

Citrullus ecirrhosus Cogn.
Loeb 40

Colocynthis ecirrhosus (Cogn.) Chakrav.

Common names: bitter apple, bitterappel, karkoer, wildekolowint.

Kwanyama: *enuua, omanuua* (pl.) [any melon], *ekanua* [something-from-which-you-can-drink]. Also see *Citrullus lanatus.*

Description: few-branched perennial, usually not climbing, white-hairy leaves ovate, 5 cm long, 3–5 lobed, stiff white hairs on veins beneath; male and female flowers, solitary, axillary, yellow; fruit spherical, about 8 cm in diameter, dark green striped, glabrous, many-seeded, bitter.

Uses: 1. The fruit is not eaten but considered poisonous. 2. Seeds crushed to obtain oil to be mixed with red ochre as cosmetic (Loeb et al., 1956). This pre-Christian custom had died out by 1973 in Ovamboland but is still observed in neighboring Angola.

Citrullus lanatus (Thunb.) Mansfeld
Rodin 2689, 2690, 2691, 2692 (all seed collections only), *9051* (Det. Merxmüller)

Citrullus vulgaris Shrad.
C. lanatus (Thunb.) Matsumura & Nakai (Det. Giess)

Common names: white watermelon (white flesh in fruit), yellow watermelon (yellow flesh in fruit), sweet melon, soetwaatlemoen, tsammawaatlemoen, also called bitter appel or bitter waatlemoen in other areas of southern Africa where it apparently develops bitter flavor not found in Ovamboland.

Kwanyama: names are based on qualities of fruit size (small, medium, or large), taste (sweet and eaten raw, or non-sweet and cooked), color (light green, dark green, or striped), seed color (red, black, or white), or whether or not seed margins are ridged. Uses are included with Kwanyama name below: (*entanga* is equivalent to a genus in Kwanyama classification):

etanga leliua—large, elongated, dark green fruit, weighing up to 20 pounds. Uses: eaten cooked [*etanga* = melon, *leliua* = to be cooked].

etanga lomungengo—small round fruit, 18–25 cm long, mottled green and yellow, non-sweet. Uses: 1. Fruit fed to swine. 2. Seeds eaten raw or roasted.

etanga lepuputa—fruit very similar in size and shape to last, sour; seeds white. Uses: fruit eaten cooked.

ekanuwa (sometimes spelled *ekanwa*)—oblong fruit, light green with dark stripes, flesh white or sometimes red, seeds reddish. Uses: eaten raw.

omumbada—soft, green oblong fruit, seeds white. Uses: 1. Fruit baked with little water, cooked flesh eaten. 2. Seeds eaten raw or fried.

domaliua [white-flesh-in-fruit], *enuua, omanuua* (pl.) [yellow-flesh-in-fruit].

Description: shaggy-haired, dichotomously branched, annual vine; leaves ovate, cordate, 3–5 lobed, 3–20 cm long and 2–15 cm wide, stiffly pubescent beneath, long-petiolate; fruit spherical to ovoid, glabrous, many-seeded.

Uses: (additional to those above) 1. Seeds of all forms eaten raw, either fresh or stored. 2. Seeds may be roasted, *donukokotua* [seeds-to-be-chewed-after-roasting]. 3. Loeb et al. (1956) stated that expressed seed oil used as base for red ochre cosmetic.

Seed collections listed were sent to U.S. Horticulture Field Station, La Jolla, California, where they were grown and determined. The following report from Dr. Thomas W. Whitaker (pers. comm., 15 November 1948) stated: ". . . Vines are exceptionally vigorous; one vine had runners in every direction for over 40 feet. This vine produced about 15 fruits each weighing over 35 pounds, besides numerous smaller ones. This item has created unusual interest among watermelon breeders because of its vigor and apparent resistance to disease." Seeds differ from those of commercial varieties in U.S.A. in being red with black beveled edges, and sometimes a yellowish center, or the peculiar beveled edge may be lacking.

Coccinea cf. *rehmannii* Cogn.
Rodin 9297

Kwanyama: *omufuwakashima.*

Description: perennial herbaceous climbing vine with tuberous roots; leaves 5-lobed with dentations on the lobes, female flowers always single, ovary and sepals covered with thick pubescence, male flowers single or clustered; fruits nearly spherical with mucronate apex, 2 cm in diameter, fruit red with green stripes lengthwise (on my specimen), seeds white, smooth and fat. Merxmüller (1966–72) does not mention the longitudinal stripes, and his key states the seeds are strongly flattened. Merxmüller (1966–72) does not record this as occurring in Ovamboland.

Uses: not used.

Cucumis africanus L. f.
Rodin 2685

Common names: wild cucumber, wilde komcommer, agurkie, komkommertjie.

Kwanyama: *etanga, omatanga* (pl.) [melon or ball]. A general name for melons.

Description: vine; leaves deeply lobed pinnately, margins dentate, overall leaf-shape ovate to round; monodelphous, fruit ovoid 5–10 cm long covered with fleshy prickles, glabrous, many-seeded. Immature fruit collected had alternating dark and light green stripes, but the mature fruit is yellow. The ripe fruit collected (*Rodin 2685*) was on a vine; whole lobed leaves had already dried up and the pedicel approximately 15 cm long; Merxmüller's key (1966–72) states pedicels are 2–5 cm long. Raw fruit bitter to taste. (See color print of fruit in Watt & Breyer-Brandwijk, 1962: 350.)

Uses: unknown.

Cucumis anguira L.
Rodin 9046

Kwanyama: *elopa* refers to type of food obtained from plant. See also *Amaranthus thunbergii.*

Description: annual vine; leaves 3–5 lobed, lobes rounded, ovate or oblong; flowers orange, corolla lobes ca. 7 mm long; Merxmüller (1966–72) gave as elliptical fruit ca. 6 cm in diameter, fruit pedicel long stalked, green and covered with fleshy acute prickles. Fruit of *Rodin 9046* spherical 3–5 cm in diameter.

Uses: 1. Leaves boiled as a potherb, extra then dried as "cabbages" (*omavanda*) to later be soaked and cooked. 2. Fruits and seeds are not eaten. Watt and Breyer-Brandwijk (1962) describe the fruit as very toxic.

Cucurbita moschata Duchesne
Rodin 2688

Common name: pumpkin. There are three closely related species and this one is most often grown in the United States for canned pumpkin.

Kwanyama: *enyangwa, omanyangwa* (pl.).

Description: large vine producing round or somewhat elongated pumpkins, white outside, golden orange inside with very firm flesh, seeds white. Whitaker and Davis (1962) distinguish this species by 5-angled smooth pedicel expanded or flared at fruit attachment, melon shape, color extremely variable. Not previously reported from South West Africa by Merxmüller (1966–72).

Uses: fruit boiled, salted and eaten as vegetable.

Kedrostis hirtella (Naudin) Cogn.
Rodin 9241

Kwanyama: *okatanga kamufifi.*

Description: perennial vine; leaves 3–5 lobed (mine all 3-lobed), leaves incised about half way to midrib and finely toothed, stem and leaves mostly pubescent; male and female flowers borne in separate leaf axils; fruit oblong 4–8 cm long, smooth, green mottled turning orange, seeds smooth.

Uses: fruit eaten ripe, even though bitter; my informant says children usually eat it.

Lagenaria siceraria (Mol.) Standl.
Rodin 2686 (seeds)

L. mascarena Naudin (formerly used for edible form)

Common names: gourd, bottle gourd, calabash, bierkalaban, kalabas, pypklabas.

Kwanyama: this species represents four different morphological fruit forms in the one botanical species. No intermediate or hybrid forms observed. Usually not planted near each other, accounting for the lack of cross pollination in kraals. Uses for the specific types are given with each fruit type:

osikola (also spelled *oshikola*) or *oikola*—this is a general term for any calabash that has a roundish shape, regardless of their size.

exhupa—a very large sized calabash averaging 60–75 cm in height, the upper part is somewhat constricted in the upper ¼ to ⅓. The upper part may be further constricted by tying stems of *Combretum parvifolium* or other plants around growing fruit, to later support the fruit as a butter churn. Uses: 1. Bitter and never eaten. 2. The dried fruit with top removed is used for storage of water, milk, making of beer or wine, storage of seeds of minor crops and foods, dried fruits, nuts, etc.

embao—small rounded gourds, similar to *exhupa* except that this form is not constricted, usually not more than 30–35 cm high. Uses: 1. Bitter and never eaten. 2. Dried gourds are used to hold water, buttermilk or milk, as carried on trips or to the fields while working; to store small seeds, etc.

omindo—the dipper gourd, spherical at one end with a long handle (Fig. 12), often 30 cm long. A hole is cut in the spherical area when it is dry for use as a dipper. Simple geometrical configurations are scratched or filed. In 1947 some designs were burned, but with hunting scenes or other activities of their daily life, but none of these were observed in 1973. Uses: 1. Bitter and never eaten. 2. Used as a dipper for water, milk, buttermilk, beer, wine, etc.

oshitila—small gourds, oblong, tapering towards the stem end, green warty surface (Fig. 12). Uses: only fruit considered safe to eat, fruit not bitter; picked before they have reached full size. Boiled and eaten with a little salt.

Description: large vine climbing on fences and bushes, annual; leaves usually 5-lobed, but not deeply; flowers large white; fruits varied, from rounded, globose at one end with long tubular section, some with warty surface, usually 15–75 cm long, seeds tan colored, elliptical, flat. See Heiser (1973) for a discussion of world wide use of these gourds.

Uses: (not included with Kwanyama names above) 1. Seeds of all species contain a high percentage of oil, up to 45–50% (Dalziel, 1937). Not reported by Merxmüller (1966–72) as occurring in South West Africa. 2. Gourds, of the *embao* type, are used for a resonance box on a one-stringed musical bow (*okambulumbumbua*), producing about four different notes by hitting the string with a stick. Music is sometimes accompanied by singing. In our area a Bushman who played one of these was the musician for a headman. 3. Loeb (1955c) states little calabashes called *ongadia* used to induce death to persons far off. Vessel containing water is stabbed by a naked sorcerer early in the morning and intended victim is supposed to die suddenly that same afternoon. 4. Covers for wooden snuff boxes carved from pieces of gourds, especially *exhupa*, but also from other forms.

Determined by Dr. Thomas W. Whitaker 7/13/48 at U.S. Horticultural Station, USDA, La Jolla, California, after growing in field conditions.

Luffa cylindrica Roem.
Loeb 127

L. aegyptiaca Mill.

Common names: loofah gourd, vegetable sponge, scropkalabas, wasvadoekalabas.

Kwanyama: *oshiyaaikutu* [scraper-of-the-clothes], also *embodi-lokuja-oykutu* [plant-to-scrape-the-clothes], formerly *embodi-lokuia-oikutu*. *Embodi* a common name for small herbaceous plants.

Description: annual herbaceous climber commonly cultivated in nearly all tropical countries.

Fruits pendulant, smooth, cylindrical, about 15–50 cm long with fibrous network inside which is very tough. When the fruit dries, bottom dehiscent and falls off, allowing seeds to drop out. The thin outer exocarp is then removed to recover the fibrous wiry interior part. Dalziel (1937) states that the inner fibrous parts are used throughout Africa, and were known from ancient Egypt; also known in South America in pre-Columbian times. He says Japan supplies the best commercial grades today.

Uses: the fibrous inner part is used for cleaning household utensils. I have seen many sponges lying around in kraals, and brought one home, but failed to get an herbarium voucher.

Momordica balsamina L.
Rodin 9028

Common names: balsam apple, aloentjie, lal-oentjie.

Kwanyama: *onyati, eenyati* (pl.) [buffalo] formerly *onjati,* also used *ofifimano.*

Description: climbing vine, on kraal fences and shrubs and in trees; leaves 3–5 shallow lobed, broadly toothed, petioled; flowers yellow, 1.5–2 cm in diameter, lobes deeply incised as to appear almost free petals, saucer shaped; fruit fleshy yellow-orange to reddish, oblong, tapering at both ends, covered with slight fleshy protuberances, dehiscing along 3 valves exposing red tissue of fleshy arils covering the seeds.

Uses: 1. The name of this plant translated as "buffalo" is a sign of bravery; fed to boys so they will be brave. Girls never eat it, or they will get vicious (Mr. Gabriel Taapopi). 2. Leaves of this plant are supposed to be eaten by the buffalo. 3. Loeb et al. (1956) mentioned fruit is mixed with boys' food so they will grow up strong and healthy.

Grows widely in the tropics of the world. Watt and Breyer-Brandwijk (1962) note it is used by many tribes in southern Africa as medicine and the young fruits are cooked and eaten; in some areas considered poisonous and causes vomiting and purging.

Cyperaceae

Detailed descriptions of members of this family are not given. A microscope and detailed keys are needed for identification. Some of the general morphological characters and the general appearance of each growing plant are given.

Stems in sedges always solid, but the internodes of grasses usually hollow; stems in sedges are often triangular, sometimes somewhat flattened, rarely round as in grasses. Roots are fibrous and sometimes form starchy "nutlets"; leaves nearly always borne only at the base of the plant; inflorescence borne on a special stem and may form an umbel, a panicle, or a spike, is usually quite compact and composed of units called spikelets. The latter are structurally more simple than grasses, being subtended by only one bract, sometimes called a glume or scale. They may be bisexual or unisexual, containing 1 to several flowers each with one ovary, or 3 stamens, or both and a perianth reduced to 6 or less bristles, sometimes absent. The fruit is usually a 3-angled achene, referred to by Phillips (1951) as a nut. According to Tobias and Turvey (1971) all sedges have the general name of *ondjadjo* in Kwanyama.

Cyperaceae grow in moist places such as seepage areas, in marshes, or in water of quiet streams or in ponds; abundant in Ovamboland along the seasonal *oshanas.*

Bulbostylis zeyheri C.B.Cl.
Loeb 124, 289 (Det. K. Huntley, UC)

Kwanyama: *ofinde, efinde* (pl.) [stump-of-grass]. Also see note for *Cyperus sphaeospermus* and *Hygrophila gracillima.*

Description: characterized by hypogynous bristles absent; base of the style persistent on the achene as a small button.

Uses: see *Cyperus sphaerospermus.*

Cyperus aurocomus Sieber ex Prengel
Rodin 9120

Kwanyama: *ofinde, eefinde* (pl.). See also *C. sphaerospermus* and *Bulbostylis zeyheri.*

Description: in open sandy wet places; rhizome has pleasant fragrance.

Uses: after a child is born the plant is roasted in a clay bowl. The smoke drifts over the mother and inhalation assists recovery.

Cyperus compressus L.
Rodin 9251

Kwanyama: none.

Description: small; brown streak down spike on bracts, stem triangular.

Uses: none.

Cyperus haspan L.
Rodin 9093

Kwanyama: unknown.

Description: growing in moist pan, distinctive heavy rhizomes, although Merxmüller's key (1966–72) states it has thin rhizome.

Uses: unknown.

Cyperus longus L. subsp. *tenuiflorus* (Rotto.) Kükenthal
Rodin 9252

Common name: waterbiesie.

Kwanyama: unknown.

Description: in moist sand near an *oshana,* stems triangular, distinctive deep brown color on bracts of the inflorescence, coarse dark green stems.

Uses: unknown.

Cyperus sphaerospermus Schrad.
Loeb 578

Common name: matjiesgoed.

Kwanyama: *ofinde, efinde* (pl.) [stump-of-grass]. See also *Bulbostylis zeyheri.* Loeb et al. (1956) have also indicated this name for *Hygrophila gracillima,* a very different appearing plant, which may be an error. Usage by Loeb is not clear for latter species.

Description: stem triangular, inflorescence in a terminal corymb depressed so compactly as to resemble an apparent umbel.

Uses: leaves with the name *ofinde* are burned so smoke drifts over woman after childbirth and inhalation assists in recovery (Loeb et al., 1956).

Fimbristylis exilis (H.B.K.) Roem. & Schultes
Rodin 8991, 9249

Kwanyama: unknown.

Description: small annual in cultivated fields; distinctive because spikelets which may be 1–2, either simple or compound, subtended by spirally arranged bracts; sometimes rhizomes present.

Uses: unknown.

Fimbristylis hispidula Vahl
Rodin 9033

Kwanyama: *okashede.*

Description: small sedge in moist sand near *oshana.* Although this species put as synonym of *F. exilis* by Merxmüller (1966–72), both he and Giess determined this as a separate species on the basis of my collections.

Uses: leaves used as a sieve for straining marula wine or beer.

Kyllingia alba Nees
Rodin 9247, 9058

Common names: biesie, witbiesie.

Kwanyama: *oshedishomula* [shin-of-a-gnu]. The small specimen (*Rodin 9058*) was collected in a field and was called *ofinde,* a general term for several sedges. See *Cyperus sphaerospermus.*

Description: annual growing in moist sand near an *oshana,* common up to 30 cm high, and roots fragrant. Also grows in cultivated fields. Heads nearly white.

Uses: 1. Roots and stems are boiled and given to women with stomach cramps as a tea. 2. The roots are burned by women, who then sit over it during menstruation to relieve discomforts. 3. The roots are also burned and the woman sits over it to get the smoke for treatment to the opening of the vagina. 4. My informant gave use for the *ofinde* specimen, that leaves used as a strainer or filter for wine and beer.

Mariscus laxiflorus Turrill
Rodin 8987

Kwanyama: *etondo-lashimbungu.*

Description: growing in a cultivated field. This plant has a very similar appearance to *Cyperus,* style has 3 branches, winged rachilla on the spikelet and disarticulating above the two lowest empty glumes.

Uses: unknown.

Mariscus squarrosus (L.) C.B.Cl.
Rodin 9037

Kwanyama: *embodi* (general name for herbs).

Description: growing near ponds.

Uses: unknown.

Pycreus flavescens Reichb.
Rodin 9038a

Kwanyama: *embodi* (a general name for herbs).

Description: in moist soil by a well; annual, 60 cm high (Merxmüller, 1966–72, says up to 30 cm high), leaves very narrow with a reddish sheath; spikelets with many distichous bracts, the lowest two empty, the rachilla is wingless, persistent; achenes oblong, flattened, smooth. Not previously reported from Ovamboland by Merxmüller (1966–72).

Uses: not used.

Pycreus pumilus (L.) Domin. subsp. *patena* (Vahl) Podl.
Rodin 9250

Kwanyama: *embodi* (a general name for small herbs).

Description: small annual sedge growing in moist sand near an *oshana*; cells on the achene round; on other species oblong and the cell walls are thicker; here bracts of the spike crenate and according to my field notes bracts are brownish.

Uses: unknown.

Pycreus sp.
Rodin 8993

Kwanyama: unknown.

Description: growing by a pond 50 km east of Oshikango, about 60 cm high. Species unknown to Giess and Merxmüller.

Uses: unknown.

Scirpus muricinux C.B.Cl.
Rodin 9066

Kwanyama: unknown.

Description: perennial to 50 cm high growing in field near pond; stems triangular, spikes compact, a few branchlets to 2 cm long bearing spikelets, spikelets 4–6 mm long, bracts whitish to straw-colored, speckled reddish-brown on borders and at apex, achenes brown.

Uses: eaten by cattle and goats.

Dioscoreaceae

Dioscorea quartiniana A. Rich.
Rodin 9010

Common name: wild yam.

Kwanyama: unknown.

Description: vine climbing in trees, roots knotty; leaves palmately compound with 5 leaflets, ca. 5 cm long, oblong to ovate; male flowers in short axillary catkins, female flowers distinct because of 3 fertile stamens and 3 sterile staminodia, but all other species in South West Africa have simple leaves and 6 fertile stamens; fruit a capsule with 3 locules.

Uses: unknown. Most species in southern Africa reported by Watt and Breyer-Brandwijk (1962) to be poisonous, although a few natives wash out poisonous elements in time of famine and eat the root. Many die apparently from not getting out all active ingredient.

Ebenaceae

Diospyros chamaethamnus Mildbr.
Rodin 2661, 8999; Loeb 296, 308, 309, 327, 328, 335, 487

Common name: wild persimmon, wild orange.

Kwanyama: *omukokofi, omikokofi* (pl.); or *omufimba* (name of tree), *okokofi* (name of fruit).

Description: low branching shrub, branching only at ground level, about 60–90 cm high; leaves oblong or oblong-elliptical to 9 cm long, lower side blue-green; flowers yellow; fruit orange with a persistent calyx, globose about 3.5 cm across, covered with brown fuzz, borne near ground, ripe in Ovamboland in December. White (1962) states that in Zimbabwe stems are burned back to ground every year, but does not kill the plant. No burning is carried on in Ovamboland.

Uses: 1. Fruit is eaten raw and not preserved. 2. Fruit is sometimes used to make brandy (*olambika*).

Diospyros lycioïdes Desf. subsp. *sericea* (Bernh.) de Winter
Rodin 2618, 2629, 2950, 9059, 9129; Loeb 277 (254 K)

Royena pallens auct. non Thunb., Hiern. in Fl. Cap. (1906)
R. lycioïdes (Desf.) A. DC.
R. pallens (Thunb.) F. White ex F. White

Common names: wild persimmon, bloubos.

Kwanyama: *oshimumu, oimumu* (pl.) formerly spelled *osimumu* (Loeb, 1956).

Description: here a shrub ca. 2 m high, deciduous (Merxmüller, 1966–72, states up to 6 m but only a shrubby form is found in northern Ovamboland); leaves oblanceolate, apex rounded to mucronate, base cuneate, 3.5–7 cm long, silky-hairy beneath; fruit subglobose, somewhat pointed, orange to dull red color when ripe, ca. 2 cm across, 6 or more seeds per fruit, calyx persistent on fruit about 1 cm long, lobes reflexed, fruit edible, sweet.

Uses: 1. Although eaten, this is not a popular fruit. My informant stated that fruits are not considered as good a quality for eating as others. 2. Fruit is put into water for ca. five days to ferment, then distilled to make brandy (*olambika*). I saw this being distilled in one hut. 3. Wood from stems used in making kraals, both fences and huts, especially where smaller branches are used. 4. Roots used for cleaning teeth. The cut end of

the root is chewed, giving off a red sap and coloring the tongue red. Chewing is continued until a bundle of fibers is all that is left sticking out end and teeth are rubbed vigorously; re-used for cleaning the teeth many times. Loeb et al. (1956) state if red places break out around mouth when this plant is used, yaws is diagnosed; four plants are used as medicines, and can be taken internally. The plants used for medicines are not known. Phillipus Paulus told me in 1973 that the redness is only temporary and heals itself in a short while. See also *Tephrosia lupinifolia, Indigofera daleoïdes, Albizia anthelmintica, Entandrophragma spicatum, Pennisetum typhoïdes, Sorghum caffrorum, Euclea divinorum* for other plants used as tooth brushes, prepared for use in the same way.

Diospyros mespiliformis Hochst.

Rodin 2625, 2701, 8917, 9000; Loeb 241

Common names: monkey guava, bush matorne, ebbehout, jakalsbessie.

Kwanyama: *omwandi,* with two possible plurals: *omyandi, eemwandi* (pl.). *Loeb 241* was labeled *okamwandi,* which refers to being a small tree, or a seedling. The old spelling was *omuandi.* The fruit is *omyandi, eenyandi* (pl.) formerly *enjandi,* in which plural form is most commonly used.

Description: an evergreen tree to 25 m high; leaves oblong-elliptical to oblanceolate elliptical, very pubescent on lower side, 8–12 cm long; male flowers have 5 petals, ca. 14 stamens, occur in 3s on peduncles about 0.5 cm long in leaf axils pubescent when young, becoming glabrous, somewhat urn-shaped; female flowers with 5 petals and sepals, in the axils of caducous leaves, corolla about 1 cm long, about 7 staminodia, calyx 0.8 cm long, pubescent outside and reflexed; fruit globose, yellowish when ripe, 2–2.5 cm in diameter, pubescent when young, calyx persistent, cupping the fruit, edible, 3–4 seeded.

Uses: 1. The sweet fruit eaten raw and also seed, which is nut-like in flavor. 2. The fruit is dried and kept until late in dry season when food is scarce. 3. Fresh fruit is used in the making of brandy (*olambika*), a fermented distilled wine. Dried fruit may also be soaked and fermented for brandy. 4. Wood is hard; used in making knife handles, knife sheaths, cups, spoons, and other household utensils. 5. Snuff boxes are carved from wood. Lids might be carved wood or from a dried calabash (*Lagenaria siceraria*). Rawhide thong is tied to it and the other end to a small iron or wooden "spoon" that is used to insert snuff in the nostrils. Wood from *Euclea divinorum* (*omudime*) is used for this purpose. Snuff box may be designed with burned geometrical figures, much as with wooden cups. Loeb (1962) says they also may carve designs on them. 6. Traditionally assegais were made from wood of this tree, as well as several other species. Both ends of spears are iron, attached to a long wooden handle in middle. Skin from an ox tail is wrapped around wood where it joins the metal at both ends of assegai. Assegais are rarely seen today. 7. According to Gabriel Hidengwa, a blacksmith, this is second choice for making charcoal for forge used in heating iron to make tools and implements. 8. The macerated fruits serve as a mastic for the hair, to which seeds such as *Berchemia discolor* (*omuve*) are stuck (Loeb et al., 1956).

White (1962) says wood is used for mortars and pestles, canoes, cabinet making and wagons in Zimbabwe. My observation is that the leaves are extremely variable in width. One collection, *Rodin 8917* was 5 cm wide, but *Rodin 9000* was only 2 cm wide, both growing at Oshikango.

Euclea divinorum Hiern

Rodin 2618, 8918; Loeb 239, 276, 320, 326

E. huilensis Gürke in Warb.

Common names: wild ebony, gwarriebos.

Kwanyama: *omudime* [to-extinguish-light] according to pers. comm. with Fr. Carlos Estermann, [to-destroy-thing] according to my informant for the tree; *odime,* for the fruit.

Description: shrub or small tree 3 m high in this area, but may attain a height of 10 m, *Rodin 8918* vinelike; leaves lanceolate to elliptical, 7 cm long, glabrous but lower side of leaf covered with small granular reddish scales; flowers in loose clusters, 4–7 per leaf axil; clusters of brown fruit grow along the end of stem, about 5–10 mm in diameter when ripe, sweetish to taste.

Uses: 1. Ripe fruit eaten raw. 2. Ripe fruit crushed to make a purple ink. 3. Fruit crushed, allowed to ferment, then distilled to make brandy (*olambika*). 4. Fruit boiled to make a purple dye, then strained to color cloth or especially palm fibers for baskets. Not a permanent dye as no mordant is used. Often boiled with the fruits of *Berchemia discolor* (*eembe*) which fruit makes ordinarily an orange dye for palm fibers used in

baskets. Mixture produces a deeper color, which Phillipus Paulus said was considered permanent. 5. Traditionally this tree never used for fires in kraal. Phillipus Paulus said this old religious custom was thought to bring bad luck. Although many Christians do not follow that tradition today, many Kwanyama women, especially new brides, will not use this for fires, especially when a kraal first built. 6. Wood of stems is used as a cross-log over gate which is the main entrance to the kraal. According to Loeb et al. (1956) stems are so placed to keep away evil spirits. 7. Wood is used for knobkerries (*odimbo*) for dances and ceremonies. See also *Acacia giraffae*. 8. Stems used as tooth brushes. See *Diospyros lycioïdes* for details. 9. When pregnant, usually unmarried, girls killed by abortion, they are thrown into one of these bushes. This was a part of pre-Christian tradition, now no longer followed. 10. When someone plants magic poisons in a kraal, in pre-contact tradition, a local witch doctor is called to uncover them. He may find rocks, eggs, toads, etc. which he gathers and after certain ceremonies at dawn the next morning, objects are thrown into this bush to destroy their power (Loeb, 1955a–c). 11. Loeb (1962) states that twigs stripped of their bark used by boys in a game which imitates cattle raiding. Branched twigs, resembling cattle horns, are placed in soft sand in model kraal from one to several meters in diameter for the game. 12. Small spoon-like tool tied to snuff box made from wood, and used to insert snuff into the nostrils. 13. According to Fr. Carlos Estermann (pers. oral comm. in Angola, 27 April 1973), leaves are stamped, boiled in water and a new widow is washed by a witch doctor to purify her. A clay phallus is also inserted into her vagina by the witch doctor before she can remarry, or have sexual intercourse. The meaning of name in Kwanyama means to extinguish bad effects of husband's death.

Euclea pseudoebenus E. Mey.
Rodin 2733

Common names: black ebony, cape ebony, swartebbe, basterebbehout.

Kwanyama: unknown.

Description: tree 3–9 m high with pendent branches, young twigs and leaves covered with short thick pubescence; leaves linear about 10 times as long as wide, 30–50 mm long; flowers white to yellowish, corolla covered with pubescence, the corolla tube being longer than the lobes; fleshy spherical fruit 4–8 mm in diameter, 1-seeded.

Uses: unknown.

ELATINACEAE

Bergia decumbens Planch.
Loeb 153a

Kwanyama: *oshiveta, oiveta* (pl.); formerly spelled *osiveta*. Also see *Aptosimum* sp. and *Blechnum punctulatum*.

Description: procumbent herb from woody stock; leaves linear, coriaceous, ca. 2.5 cm long, flowers axillary, sepals 3–4 mm long, apex subulate; fruit a 5-chambered capsule. Species not listed by Merxmüller (1966–72) as occurring in Ovamboland.

Uses: crushed and used as a dressing to promote healing of fresh wounds, as with other species designated *oshiveta* (Loeb et al., 1956).

Bergia prostrata Schinz
Rodin 2641, 9007, 9237; *Loeb 48*

Kwanyama: *oimboidi,* a generalized name for small prostrate or nearly prostrate herbaceous plants. *Okapata, oupate* (pl.) [little-cooking-place], specific name for this plant in 1947; *omumakani, omimakani* (pl.) name given in 1973.

Description: prostrate herb growing on a pan, covered by short thick pubescence; leaves lanceolate to ovate-lanceolate, to 16 mm long, leathery, margins thickened, distinctly or indistinctly dentate; flowers white or pink, 2–3 fascicled in leaf axils, sepals 1.5 mm long with subulate apex; fruit a 5-chambered capsule.

Uses: 1. Cattle food. 2. Roots stamped, made into a tea, drunk for diarrhea (1973 field notes). 3. The whole plant is ground up, left standing in cold water, then filtered and liquid poured on millet porridge to cure diarrhea (Loeb et al., 1956).

It is not known if the more recent use of roots only as a tea has been found more effective as an anti-diarrhea medicine, or if it is a more convenient way to get the treatment.

EUPHORBIACEAE

Acalypha indica L.
Rodin 9160, 9181

Rodin 9181 collected at Ruacana Falls, and *Acalypha senensis* Klotsch, *Rodin 9160*, collected north of Grootfontein, but outside Ovamboland, were not recognized by my informants,

nor were any uses known for them. *A. indica* has previously been collected within Ovamboland, but the exact area is not indicated (Merxmüller, 1966–72).

Antidesma venosum Tul. non E. Mey.
Loeb 85

Common name: umquaqua.

Kwanyama: *ofufe, eefufe* (pl.). Also see *Pseudolachnostylis maprouneifolia* and *Baphia massaiensis.*

Description: small tree; leaves entire, broadly elliptical 4–10 cm long, young twigs and undersides of leaves pubescent; flowers yellow, dioecious, corolla small, stamens 3, several times as long as the corolla, 1 locule with 3 stigmas; drupe fruit with 1 or rarely 2 seeds, fruit 6–7 mm long turning from red to black.

Uses: the black fruits are eaten raw.

Dalziel (1937) states the tea made from leaves is used for stomach troubles in tropical West Africa, and the leaves applied to the external parts of the head are used for headache. Dalziel states the sweet berries, slightly acid, are eaten in tropical Africa. J. M. Wood (1899–1908) states the berries found in Natal are considered poisonous. This species was not listed by Merxmüller (1966–72), as occurring in Ovamboland.

Croton gratissimus Burch.
Rodin 2668, 8979, 9043; Loeb 181, 189, 370, 391, 422, 423, 424, 585

C. zambesicus Müll.-Arg.

Common names: buchu (although usually used for *Agathosma, Barosma,* and *Diosma* in Rutaceae of the Cape area); boekoe is the Afrikaans word usually used for these same shrubs in the Cape; bergboegoe; booghout; rekstokbos.

Kwanyama: *ombango, eembango* (pl.).

Description: woody bush nearly 2 m high; brown glandular scurfy surface on lower sides of the leaves and a silvery sheen on upper side, glabrous, elliptical to lanceolate, narrowly cordate at base, usually with 2 conspicuous glands near base of lamina; flowers cream-colored, unisexual but monoecious, in racemes up to 12 cm long, a few female flowers at base, the remainder male; fruit a tri-lobed capsule about 1 cm in diameter, 1 seed per locule.

Uses: 1. Wood used for carved dolls, parts of which may be a mixture of clay and beeswax. 2. Wood used to carve knobkerries (*odimbo*), especially for special ceremonies. Also see *Acacia giraffae.*

Euphorbia forskalii Gay, Webb & Berth.
Rodin 8988

Kwanyama: *okaxungu,* older spelling *okahungu.* Also see *Mollugo cerviana.*

Description: small annual prostrate herb with milky latex; leaves elliptical to ovate, 4–12 mm long; unisexual apetalous flowers, monoecious, capsule 3-lobed, pubescent, 1.5–6 mm in diameter. This plant has distinctive reddish stems. A new record for Ovamboland.

Uses: 1. Stems and leaves are put into a special food, mostly potherbs, called *eta-pati.* 2. Some plants being boiled to recover the oil; stems are added to the pot to help separate the oil from other plants.

Euphorbia inaequilatera Sond.
Loeb 267b

Common names: lipbossie, rooiopslag.

Kwanyama: *nanhenu uiokomutunda* [hoe-slips-off Nanhenu]. The name also infers elevated as on anthills.

Description: nearly prostrate herb with stout taproot; leaves small, cordate, unisexual flowers are borne in leaf axils. Closely resembles *E. forskalii,* and has similar 3-lobed capsules, but capsules here always glabrous, lack the reddish stems.

Uses: unknown.

Euphorbia montieri Hook. f. subsp. *montieri*
Rodin 9015

Kwanyama: *omupindinanguali.*

Description: succulent stem to 60 cm; tap roots to 60 cm deep, leaves linear to oblanceolate 10–12.5 cm long, membranous upper leaves often purple spotted; flower stalks slender, ca. 6 in a cluster dichotomously branched with opposite sessile cordate bracts; capsule 8–10 mm long on a reflexed pedicel, white latex throughout plant.

Uses: 1. Cooked and given to mad dogs, presumably suffering from distemper, not rabies. 2. Latex of plant used for toothache when put on the affected tooth. 3. Roots stamped, made into a tea and drunk by humans as a laxative. 4. Roots stamped, put into churn with milk and cream to ensure high butter production.

Euphorbia striata Thunb.
No collection

Common name: melkgras.

Description: stems about 30 cm high from woody rhizome; leaves short, lanceolate, bracts of the inflorescence broadly ovate. Not listed in Merxmüller (1966–72).

Uses: latex smeared on arrow heads for poison (Lebzelter, 1934).

Euphorbia tirucalli L.
Rodin 9014

Common name: tirucalli tree, krammelkbos.

Kwanyama: unknown.

Description: a nearly leafless, or readily deciduous shrub 2–4 m high, much-branched, succulent green stems; capsules 3-loculed, green. Often planted around homes of Europeans, and a few Kwanyamas. Probably introduced within recent years. Not listed in Merxmüller (1966–72) as being in South West Africa.

Uses: unknown.

Euphorbia sp.
Loeb 50

Kwanyama: *nahenu wokomufitu* [hoe-slips-off-in-sandy-soil], inferring there is an attempt to dodge or evade an issue.

Description: Loeb's specimen was not adequate for determination of species and was not matched with PRE in 1948.

Manihot utilissima Pohl
Rodin 9040

M. esculenta Crantz

Common names: cassava, manioc, tapioca.

Kwanyama: *omudika, omidika* (pl.) plant; *omedi-omdika* [root-of-*omudika*] for roots.

Description: introduced, cultivated short-lived perennial with erect stems 2–4 m high; leaves palmately compound about 5 leaflets per leaf; several underground branching roots, usually growing parallel to the ground, up to 15 cm below surface, thick fleshy white roots covered with a thin brownish bark develop to 7–9 cm in diameter, 40–50 cm long here (larger in places with richer soil and greater rainfall in the tropics), roots mature in a minimum of 6 months, but fully grown roots take 12–18 months to mature, and get woody and somewhat useless if left too long. Fortunately the *Manihot* in this part of Africa is all sweet and not bitter because of presence of hydrocyanic acid or of manihotoxine (Watt & Breyer-Brandwijk, 1962). Originally from tropical America, it is high in starch, low in protein and fats. Very little *Manihot* grown in Ovamboland because the rainfall is too low and there is no irrigation system.

Uses: 1. Roots eaten raw, or stamped and made into porridge. 2. Roots boiled and sometimes mixed with meat. 3. Leaves boiled as a potherb and may be dried as "cabbages" (*omavanda*).

Phyllanthus pentandrus Schum. & Thonn.
Rodin 8985, 9284

Kwanyama: unknown.

Description: a low erect branching annual, less than 0.3 m high, apetalous, 3-chambered spherical ovary borne in the axil of most leaves on the branches.

Uses: unknown.

Pseudolachnostylis dekindtii Pax
Rodin 9292

Kwanyama: *omuliambabi, omiliambabi* (pl.).

Description: a medium sized tree, very similar in general appearance to *P. maprounifolia,* but in this species entire lower surface of leaf is covered with pubescence.

Uses: 1. The fruit not edible, but may be made into brandy (*olambika*). 2. Roots crushed, made into a tea for an upset stomach.

Pseudolachnostylis maprounifolia Pax
Loeb 91

Kwanyama: *ofufe.* Also see *Antidesma venosum.*

Description: medium sized tree, deciduous, leaves elliptical, ovate or oblong, to 9 cm long, pubescence only on the midrib of the under side of the leaf and petiole; male flowers in clusters at the ends of pedicels to 1.5 cm long, female flowers single, on longer pedicels; fruit globose, indehiscent, ca. 1.75 cm in diameter.

Uses: unknown.

Ricinodendron rautanenii Schinz
Rodin 2632, 2633, 8980, 9143; Loeb 210, 400

Common names: manketti (tree), manketti nuts (seeds), mankettiboom.

Kwanyama: *omunghete, ominghete* (pl.) for the tree, older spelling *omuñete, enghete, omanghette* (pl.) for the fruit.

Herrero: *ongete.*

Description: large spreading tree to 20 m high,

leaves palmately compound with 5–7 petiolate leaflets, ovate to obovate, base asymmetric; flowers cream-colored; fruit a plum-shaped drupe; under the fleshy cover is a hard shelled endocarp; inside is one edible seed.

Uses: 1. The fleshy outside portion of the fruit eaten raw or cooked. 2. Seeds eaten raw or cooked as a flavoring of gravies, especially with roasted chickens. I have eaten them this way and they are excellent! 3. Seeds stamped in a mortar and pestle, made into paste, used as a sauce called *omuaji* with specific foods (Loeb et al., 1956). 4. Seeds stamped after cooking, made into a paste, mixed with red ochre to put on the body, especially for women who wore only apron skirts. This custom followed only by women (Loeb et al., 1956). 5. Bows for hunting are made from it, particularly in eastern area 100 km from Oshikango. 6. Wooden spoons are carved from limbs. 7. Drums made from larger trunks of the trees, but the tree never cut down around kraals because it is highly valued for its fruit and nuts. 8. Enemas have been administered to children sometimes with an infusion of the leaves of this plant, according to the late Dr. J. Gildenhuys, former Medical Director of the Oshakati Government Hospital. Many children died from these enemas (pers. oral comm., 18 February 1973). 9. Oil expressed from seeds by stamping used for cooking.

Ricinus communis L.

Rodin 2640, 2683, 9045; Loeb 101, 186, 188, 270

Common names: castor bean, kasterolieboom, gloubottelboom.

Kwanyama: *olumono, omalumono* (pl.).

Description: perennial to 4 m high, woody base, upper branches herbaceous; leaves 5–7 palmate incised lobes, leaf 15–30 cm long, sometimes reddish, often several glandular outgrowths on the petioles; monoecious, the flowers borne in spikes with the apical region, male flowers stamens numerous, filaments much dichotomized, female apetalous flowers at the base of the spike with 3 lobes and 3 styles; dehiscent capsule, 3 carpels, each containing one mottled brownish seed which is poisonous! Seeds contain 50% castor oil, a toxic albumin ricin, and a toxic alkaloid, ricinine, according to Watt and Breyer-Brandwijk (1962). Ricin considered most toxic ingredient.

Uses: 1. Women crush seeds by stamping to obtain the oily paste which is cooked and mixed with red ochre. This cosmetic is applied to the hair, the skin and even to the leather aprons worn in olden times by women. 2. Powdered roots rubbed over bleeding hymen as a styptic when hymen is so tough it must be opened by the doctor with a sharp knife (Loeb et al., 1956). 3. Powdered roots used as a styptic when a partial circumcision is made if the prepuce on boys is too constricted (Loeb et al., 1956). Circumcision is rarely performed any longer. Partial circumcision is discussed by Loeb who states same herb was used in former times for circumcision of boys as part of puberty rites. 4. Loeb et al. (1956) state that fruit has been used as a purgative, although how the seed was processed and in what proportions it was used are not known. My informants (1973) stated that this is no longer used because of the extreme toxicity of the seeds. Watt and Breyer-Brandwijk (1962) state that two or more seeds are lethal for humans although natives in other parts of Africa do express the oil as a purgative without removing active ingredients from the seeds. Zulus eat the seeds directly as a purgative. 5. Leaves boiled and put on swollen muscles to reduce swelling and soreness. 6. Bark used for stitching up wounds. Zimbabweans also use it similarly (Watt & Breyer-Brandwijk, 1962).

Spirostachys africana Sond.

Rodin 2616, 2674, 9017; Loeb 24, 307, 415

Common names: tambootie, African sandalwood, tambotieboom, gifboom.

Kwanyama: *omuhongo, omihongo* (pl.); an alternate, *omunghongo* [big-command].

Description: tree usually ca. 8–10 m high here, but growing to 20 m in areas with higher rainfall; bark rough brown; leaves elliptical to ovate, both leaves and stems producing an irritating white latex; flowers in apetalous spikes or catkins, male flowers in apical region, single stalked female flowers near base, each female flower 3-loculed, each bearing one seed; wood very hard and very heavy, heartwood being termite resistant; deciduous, losing its leaves in November.

Uses: 1. Wood is used for poles for houses, especially rafters, selecting straight branches. Poles must be cut between January and March when no sap is running. 2. Wood cut into boards for big houses. 3. Fish toxicant is obtained by

crushing stems in water pools of *oshanas* during latter part of the rainy season when water is receding. Men stamp on branches in shallow pools causing fish to go into a stupor, rise to the surface, often floating belly-side up, when easily caught. This system much more common in Angola, a short way north of Ovamboland border among Kwanyamas there. The bark of larger stems is used in this manner according to Bruwer (1961). 4. Sap in the foliage is known to be poisonous to humans and cattle, and is never used for fodder for cattle. 5. Sap causes temporary blindness and burns mucous membranes. Sour milk used by natives to wash out eyes so affected. 6. Wood is used for fence poles. 7. Walking sticks carved from it. 8. Torches made from dry wood; the only tree from which torches can be made. Good light is produced once it becomes ignited. Loeb et al. (1956) state used for special night ceremonies, in encirclement of new kraal by torchlight, and to catch frogs at night. 9. Common name, known by many Ovambos, *tambootie,* mistakenly credited to *Sapium africanum* by Dalziel (1937), as an ingredient in arrow poison, mixed with sap of *Adenium boehmianum.* However, *Adenium* was used by Ovambos and Bushmen for arrow poison, sometimes mixed with other poisons. 10. Leaves made into an infusion for enemas for children, which is lethal. Many Ovambos believe that if their children do not have a bowel movement every day they must have an enema, and several ingredients used for these enemas are poisonous.

Tragia okanyua Pax
Rodin 9381; *Loeb 53*

Kwanyama: *okalilifa, oulilifa* (pl.) [little-makes-cry].

Description: erect annual herb to 45 cm high, stinging hairs on stems, leaves, and sepals; leaves ovate to oblong with lobes or dentations near base of blade, petioles ca. 5 mm long; inflorescence a raceme with a number of male flowers in the apical region, each with 3 stamens; a few basal female flowers on individual peduncles, each forming a small capsule with 3 carpels. The only plant observed in Ovamboland with stinging hairs. Common in some areas in May, late in rainy season.

Uses: if children will not work, like herding cattle for boys, parents threaten to rub plant with stinging hairs on them. Because of stinging hairs plant is avoided.

GENTIANACEAE

Gentianaceae used by Phillips (1951) and many American botanists. Genus put into Menyanthaceae by Merxmüller (1966–72).

Nymphoïdes indica (L.) O. Kuntze
Rodin 9385

Limnanthemum indicum (L.) Griseb.
Menyanthes indica L.

Common name: geelwateruintjie.

Kwanyama: *inaymado* [mother-of-the-water-lily].

Description: aquatic herb growing in quiet water of an *oshana* at the latter part of the rainy season when waters recede; floating leaves orbicular to ovate sometimes to 20 cm across, flowers white or yellow (*Rodin 9385,* yellow), on long pedicels arising from the petioles of the leaves; flowers 5–6 fringed lobes with clusters of hairs on upper side of the corolla; fruit a dehiscent capsule, seeds numerous, smooth or warty. Associated with *Isoëtes* and *Nymphaea.*

Uses: not used.

GRAMINEAE

All grasses are plants with linear leaves and specialized flowers without petals or sepals. Some grasses have single spikes, others have racemes, panicles, etc. for the inflorescence. Each spike is composed of a number of spikelets subtended by a pair of glumes and one or more "flowers" or florets. Each floret has two green bracts, the outer lemma and the inner palea, and if fertile three stamens and one pistil with two stigmas. In some cases a small structure inside the bracts called a lodicule represents reduced corolla. Most grasses included are native but a few such as Bermuda grass, sugar cane and mealies (maize) are introduced and are not too common. Without detailed descriptions and keys it would be impossible for amateurs to identify grasses without some special training. Therefore for this family no detailed descriptions are given. In Kwanyama *oluhono* is the word used for the stem of any grass and *eidi* is the common word for grass.

Aristida adscensionis L.
Rodin 9073

Common names: besemgras.

Kwanyama: *oshoke* [plant-stickers], formerly *osoke.* See other species of *Aristida.*

Uses: one of six most important and common thatching grasses. The others are: *eembungu* (*Phragmites australis* and *P. mauritianus*), *omukashulwa* (*Panicum trichonode*), *omunashoke* (*Triraphis fleckii*), and *wanenuna* (*Tricholaena monachne*). Not given as occurring in Ovamboland by Merxmüller (1966–72).

Aristida gracilior Pilger
Loeb 245

Common name: langbeentwaagras.
Kwanyama: *oshoke,* formerly *osoke.*
Uses: an important thatching grass.

Not known if a synonym of *Aristida gracilior* var. *pearsonii* Henrard, which is listed by Merxmüller (1966–72) under *Stipagrostis hirtigluma* (Steudel) de Winter. Not previously listed in Merxmüller (1966–72), from South West Africa.

Aristida junciformis Trin. & Rupr.
Loeb 316

Common names: wiregrass, besemgras.
Kwanyama: *oshikateko,* formerly *osikateko.*
Uses: the stiff dry stems are collected and used for a broom (*olukateko*) for the stamping place to clean it or to gather in flour after pounding (Loeb, 1962).

Aristida meridionalis Henr.
Loeb 588, 590

Common names: gemsbokgras, heigras, klossaadgras.
Kwanyama: *omushoke,* or *omunashoke.*
Uses: eaten by cattle and goats as fodder.

Aristida stipitata Hackel subsp. *spicata* (de Winter) Melderis
Rodin 8974, 9390

Kwanyama: *oshoke,* formerly *osoke.* See other species of *Aristida.*
Description: perennial bunch grass about 60 cm high, in uncultivated areas.
Uses: considered one of best thatching grasses. See *A. adscensionis.*

Craspedorhachis sarmentosa (Hackel) Pilger
Rodin 9095

Willkommia sarmentosa Hack. (Det. PRE)

Kwanyama: unknown.
Description: a low slender grass.
Uses: unknown.

Cynodon dactylon L.
Rodin 9382; Loeb 160

Common names: Bermuda grass, quick grass, anosterweek, buffelgras.
Kwanyama: *onguena* or *omwiidi,* formerly *omuididi.* Also see *Tricholaena monachne.*
Description: low perennial grass with wiry stolons and rhizomes, leaves short with a row of hairs just at base of blade in place of a ligule, 4–6 digitate spikes in the inflorescence. A worldwide weedy grass.
Uses: considered important food for cattle and donkeys, especially in the dry season, but a pest in cultivated fields.

Digitaria eriantha Steud.
Rodin 2797, 9065 (Det. Merxmüller)

Common names: bloukruisgras, kleinvingergras.
Kwanyama: unknown.
Description: growing by a pond in an *oshana.*
Uses: food for cattle and goats.

Digitaria milanjiana (Rendle) Stapf
Rodin 9094 (Det. Merxmüller)

Common name: panvingergras.
Kwanyama: unknown.
Description: coarse grass up to 60 cm high, runners take root, apparently an annual, grows in cultivated fields in adjacent areas.
Uses: food for cattle and goats.

Dinebra retroflexa (Vahl) Panzer
Rodin 9073 (Det. Merxmüller)

Common name: katstertgras.
Kwanyama: unknown to my informant, although four other grasses in the same field had Kwanyama names and only two of those had special uses.
Description: an annual grass in cultivated fields, the inflorescence somewhat resembling that of *Bromus.* This genus has not been reported in South West Africa by Merxmüller (1966–72).
Uses: cattle and goats graze upon it.

Echinochloa colonum (L.) Link
Rodin 9064

Common names: jungle rice, swamp grass.
Kwanyama: *ombode.*

Description: grass growing by a pond in *oshana*, some reddish color on glumes.

Uses: food for wild birds, such as ducks.

Ennaepogon cenchroïdes (Roem. & Schultes) C.E. Hubbard
Loeb 568, 589

Common names: fur grass, suurgras, tuingras.

Kwanyama: *omwiidi*, formerly *omuidi*. Also see *Tricholaena monachne*.

Description: a perennial distinguished by 9 equal awns on lemmas.

Uses: unknown.

Ennaepogon sp. cf. *E. scoparius* Stapf
Rodin 8936 (Det. Merxmüller)

Common name: dasgras.

Kwanyama: *ongai*.

Description: perennial grass in cultivated field.

Uses: causes death to cattle, but not to goats that feed upon it.

Eragrostis cilianensis (All.) Vignolo-Lutati
Rodin 8934

Common names: blouseotgras, rysgras.

Kwanyama: *okaidi-kokananga*.

Description: common grass in cultivated fields. Not reported as being in Ovamboland by Merxmüller (1966–72).

Uses: eaten by cattle and goats.

Eragrostis sp. cf. *E. cylindriflora* Hochst.
Rodin 8935 (Det. Merxmüller)

Kwanyama: *ombidangolo*.

Description: perennial grass in cultivated field. Not reported by Merxmüller (1966–72) as occurring in Ovamboland.

Uses: eaten by cattle and goats.

Eragrostis lehmanniana Nees
Loeb 566, 567

Common names: eastern province vlei grass, bloussadgras, kleinbloussaadgras.

Kwanyama: *ombidangolo*. Also see *E. cylindriflora* and *E. rotifer*.

Description: grass growing near an *oshana*.

Uses: 1. Cattle eat it. 2. Used for curing certain ills by magic, especially as a substitute for the dung of the hare, because he eats this grass (Loeb, 1955a–c).

Eragrostis pallens Hackel
Rodin 9253

Common names: gemsbokgras, olifantsgras.

Kwanyama: *omaoloolo*.

Description: a tall coarse perennial grass.

Uses: 1. A thatching grass. 2. The coarse stems are used to hit the string to make the sounds on the one-stringed instrument, the *okambulumbumbua*, on which a gourd serves as the resonance box, enabling the sounds to be carried a considerable distance. These are often played by Bushmen in Ovamboland, who serve as musicians and sometimes as servants, especially of headmen. They may sing to the accompaniment of these instruments. See Fig. 16 of a Bushman playing one of these instruments.

Eragrostis rotifer Rendle
Rodin 9072, 9097

Common name: reëngrassie.

Kwanyama: *ombidangolo* for *Rodin 9072*. See also *E. cylindriflora*, *E. lehmanniana*, and *E. trichonode*. *Omukasula* for *Rodin 9097*. See also *Panicum trichonode*. (This latter may have been an error by my informant.)

Uses: food for cattle and goats.

Eragrostis superba Peyr.
Rodin 9089 (Det. Merxmüller); *Loeb 535*

Common names: heart seed grass, love grass, boslius(saad)gras, hartjiesgras, knoppiesgras.

Kwanyama: *olupunga* [related-to-the-lung]. See *Panicum kalahariense*.

Description: perennial grass.

Uses: food for cattle and goats.

Eragrostis trichophora Goss. & Dur.
Rodin 9212

Kwanyama: *ombadangolo*. Also see *E. rotifer*.

Description: a very fine annual grass, rooting at the nodes along ground.

Uses: food for cattle and goats.

Eragrostis viscosa (Retz.) Trin.
Loeb 182, 429, 430

Kwanyama: *okankani* (*Loeb 182*), *okaljani, ouliana* (pl.) [little-eater], (*Loeb 429, 430*).

Description: annual grass about 25 cm high distinguished by the viscous glandular hairs found on the leaf sheaths.

Uses: unknown.

Heteropogon contortus (L.) P. Beauv.
Rodin 9088, Loeb 315

Common names: spear grass, stick grass, assegaigras, klitsgras, etc.

Kwanyama: *ohengo jasimbungu* (*Loeb 315*) [sharp-point-of-a-hyena-which-sticks-into-paper], which now should be spelled *ohengo yashimbungu.*

Description: coarse perennial grass with distinctively twisted or contorted awns.

Uses: a good thatching grass for huts.

Panicum trichonode Launert & Benvoize
Rodin 9098

Kwanyama: *omukashula, omikashula* (pl.); formerly *omukasula.* According to Mr. Gabriel Taapopi, Kwanyama linguist in Windhoek, it should be *omukashulwa.*

Description: perennial grass with short rhizomes up to 90 cm high, growing in a pan. Along Ovamboland border has become scarce because of overgrazing, but is still abundant across the border fence in Angola, where it is obtained when needed.

Uses: considered one of best thatching grasses; cut green, tied in bundles with fibers of palm leaves to dry. Put on the kraal floors or hung up until dry, as only dry grass is used for thatching.

Panicum sp. (near *P. kalaharense* Mez.)
Loeb 221

Kwanyama: *olupunga, omalupunga* (pl.) [referring-to-lung]. See also *Eragrostis superba.*

Description: perennial with short stout rhizome, from 15–35 cm high.

Uses: unknown. Because of name it was probably used at one time for humans or for cattle diseases of the lung (lung sickness, as it is called there), but may not have proved a successful medicine.

Pennisetum albicauda Stapf. & Hubb.
Loeb 47a (Det. PRE, 1948)

Same names and uses as *P. typhoïdes.* Not reported as occurring in South West Africa by Merxmüller (1966–72).

Pennisetum typhoïdes (Burm.) Stapf. & C.E. Hubbard
Rodin 2697, 4848, 9158, 9159, 9223; Loeb 473

P. americanum (L.) K. Shum (Det. SANH)

Common names: millet, pearl millet, poko grass, kaffermannam, fokogras.

Kwanyama: *ehangu, omahangu* (pl.) name of the plant and seeds (grain), only plural form used; *oshihati, oihati* (pl.) one stalk; *olulia lehangu,* a term for seeds, but rarely used; *onghundu,* coarse brown flour consisting mostly of bran which comes from first sifting of flour, and commonly called "bran" by Ovambos; *oufila,* fine flour with bran removed, the form used especially for porridge, but if malted for beer.

Description: cultivated native annual, usually unbranched except sometimes at the base; 2–3 m high in a good year, inflorescence a compact terminal panicle which outwardly appears to be a spike, Their first choice of crops because it can withstand extended drought and still produce a crop with minimum of rainfall, whereas *Zea mays,* corn or mealies, would die. *Sorghum* has similar drought resistance, but is now grown in less quantities.

Uses: 1. Most important staple food is porridge, prepared by women who have ground dry grain, usually with a little water. Flour sifted and yellow bran (*onghundu*) removed. Again sifted for just fine flour which is white. When meal is being prepared fine flour is added to boiling water until it is thick, and the woman constantly stirs it. Eaten without salt, but commonly eaten with meat alone, or with potherbs, but not with both. Milk or butter may be put on it, and eaten with three or four fingers. 2. Bran (*onghundu*) is fed to horses. 3. Bran is sometimes mixed with good white flour and made into "rough beer" which is made in a short time (overnight), and has a very low alcoholic content. Considered very nutritious and sometimes serves as "breakfast," but said not to have taste of regular "Kaffir beer," *omalodu.* 4. Kaffir beer (*omalodu*) is consumed in large quantities daily and should be considered staple food because of high amount of millet flour suspended, and because of normal low alcoholic content. Formerly always drunk from attractive carved wooden cups with burned designs, but now drunk mostly from Mason quart canning jars in kraals and in numerous small beer shops recently developed by Africans.

Following is a detailed description of beer making given to me by Roland Kalitu, my chief informant: Whole grain *omahungu* (millet) is put into water in a clay pot for a couple of days. It swells considerably, so pot cannot be full when

it is first measured out. Grain is then taken out and put into moist ground and covered with sand, which is kept wet. It sprouts in a few days or a week, depending on weather. Grain is removed and the sand washed out with special strainers. Strainer or sieve is called *omgalo* and is made from palm leaves of *Hyphaene ventricosa*. Grain is stamped in stamping block while still moist and is again sieved by same *omgalo* to remove the large particles of grain. Process is repeated until all is a small uniform size. Grain is then dried in the sun. Usually a large quantity of grain is malted in this fashion, then smaller proportions are used for making of daily beer, sometimes with *Sorghum*, Kaffir corn, or milo maize. For each batch nearly one-half pot of malted *omahongu* is required. Pot is filled with water and grain is boiled, then strained again with another special sieve (*omako*), which is made from sedges. This sieve holds back the coarser part of grain, but much fine grain goes through the sieve and remains in suspension. It is always cooled before it is put through the sieve and is added to the large special clay jars, or rarely a calabash or hollowed out palm trunk. Normally a clay pot is used only for beer, and the residue inside from the previous day's (or two days previous) batch. Residue from previous batches thus contains yeast essential for fermentation process. Pot is then partly buried in a hut and covered to keep out fruit flies. That evening a small amount of unmalted fine *omahongu* white flour is added called *oufila*, which is said to improve flavor. Next day the pot will be effervescent with foam from escaping carbon dioxide gas. It is now ready to drink and is called *omalodu*. When drunk at this time alcoholic content is very low and this beverage serves as main part of breakfast. There was no change in the process during the 26 years interval of my visits except that *Sorghum* was more commonly used in 1947. Also some men who have been away to work in mines or agricultural employment have learned to "spike" their beverages to increase the "kick," sometimes by increasing the alcoholic content by adding a quantity of up to three cups per batch of brown sugar, and sometimes by using carbide in their miner's lamps. This latter custom is rare, and once the supply of carbide smuggled in from mines is used up, none other is available. This beer is usually only good to drink for two to three days at the most. It is easily contaminated by fruit flies, the carriers of *Bacillus aceti*, and soon the alcohol is converted to vinegar. I remember attending one wedding feast in 1947 at which beer was served—as much as you could drink. The first cup was fresh and a very refreshing drink on a hot day. The second cup had quite a bit of acetic acid and was almost unpalatable to my taste. One informant told me that the life of beer could be extended if a small amount of sugar is added each night to keep it "alive." My informant told me that beer shops (*eemba*) are chief places where brown sugar is put into beer, and it is put in the night before it is sold. 5. Another Kaffir beer (*omanyeu*, formerly *omanjeu*) is made without fine flour added after the cooking process. This is reported to have even less alcoholic content than *omaladu*. My informants say it is a little sweeter and best for children although it has a less desirable flavor. 6. Rough beer (*oshikundu*) is made, especially from malt sediment, and is usually drunk early in the morning. No fine flour is added, but otherwise it is produced like *omaladu*. It has a lot of grain in suspension, and may be rather thick. Africans say rough beer lacks good flavor, but they do not always take the trouble and time to make the good *omaladu*. 7. Cakes made from this grain. Whole grain stamped with a little water so that the yellow bran (*onghundu*) may be sifted out. Then good flour is stamped again to make it finer white. Cold water and salt are added to make a thick dough which is patted thin and called *omungome* [flat-cake]. Once cooked on coals, they are now fried in a pan with oil. 8. Another form of *omungome* or cakes was used in 1947, but apparently no longer in use. The white flour is mixed as a liquid batter with water, poured into a hole in the hot ashes, partly covered with coals. The cooked product is removed with a stick, ashes washed off with water and it is eaten. 9. *Omungome* dough is sometimes made as little balls and put into boiling water to cook, much as Europeans do some dumplings. 10. Fine flour (*oufila*) added to boiling milk and salted for a porridge is called *oshinangua*. This porridge is the first meal served after cattle are brought back to the kraal from the cattle posts, just at the beginning of the rainy season. 11. Fine flour (*oufila*) mixed with buttermilk and eaten without cooking in a dish is called *olumbololo*. 12. Millet grain boiled whole, and as such is called *omahola*. Salt is added just before it is eaten. Sometimes *ongongo, Sclerocarya caffra* (or marula nuts), are eaten with *omahola*, also eaten with whole *oilyavala, Sorghum caffrorum*. Marula nuts are not eaten with any other foods in this manner.

13. Green stems and leaves are used to clean teeth after eating (Loeb et al., 1956). 14. Coarser siftings of flour (*onghundu*) are used as a cleaning meal in washing red ochre grease paint from the body, according to Loeb et al. (1956). Washing is done early in morning, massaging in wet millet meal, rinsing down with gourd dippers of water. Women wash from head down, while men wash from feet up. According to my chief informant, Roland Kalitu, and my own observations, this practice is rarely if ever observed now, because use of red ochre by 1973 on the body has gone out of fashion. It is looked upon as a pagan custom, according to my informant. 15. At beginning of the rainy season when foods are somewhat scarce, whole young millet plants are sometimes cooked in fat and eaten to reduce body swelling due to starvation in famine (Loeb et al., 1956, in part). 16. Another form of cake was made by boiling ground millet (*omahangu*) and salt to form a porridge, cooled and hardened. This was then roasted over a charcoal fire, then washed and served to the king (Loeb, 1962). It was also popular for use when travelling or going hunting as food. 17. Dried stalks of this plant, *oshihati* are used as one of the grasses for thatching the conical roofs of their huts, *enduda* (pers. comm. from R. A. Bowen, Native Commissioner of Ovamboland, 4 December 1964). It is my observation these stalks are only used over cooking areas, not as a typical waterproof thatch but as a sunshade on a somewhat flattened framework for use during hot dry season.

Phragmites australis (Cav.) Steud.
Rodin 9132 (Rundu), *9173* (Kunene River)
9280 (Etosha Pan)

Common names: common reed, fluitjiesgras, vlakkiesgras.

Kwanyama: *olumbungu, eembungu* (pl.), apparently only the plural form is used.

Description: a tall perennial grass to 4 m high with strong cane stems. Inflorescence a dense somewhat spreading panicle; growing in dense clumps in moist or seepage areas or along waterways.

Uses: 1. Used for thatching huts and considered one of four most desirable grasses. 2. Sleeping mats are sometimes made from the cane-like stems. 3. Stems are used as flutes by removing some septa at nodes, except one near where the hole for blowing is located.

Phragmites mauritianus Kunth
Loeb 489

P. communis var. *mauritianus* (Kunth) Baker

Common names: common reed, dekriet, fluitjiegras.

Kwanyama: *olumbungu, eembungu* (pl.). See *P. australis.*

Description: a tall cane-like grass, perennial growing in dense thickets, always along waterways, or near moist or swampy locations. No such places are found close to Oshikango. Closely resembles *P. australis* in appearance.

Uses: an important thatching grass sometimes growing along *oshanas* many miles from kraals. Because it is so highly esteemed for thatching, women walk many kilometers to obtain it during the winter dry weather, and carry big bundles (Fig. 20) back on their heads. I saw some women returning from such a trip in 1947 and was told they had to walk about 8.5 km from Oshikango to obtain it.

Pogonarthria squarrosa (Lichr.) Pilger
Loeb 525

Common names: herringbone grass, sekelegras.

Kwanyama: unknown.

Uses: unknown.

Rynchelytrum villosum (Parl.) Chiov.
Rodin 9087

Common name: rooisaadgras.

Kwanyama: unknown.

Description: perennial grass.

Uses: unknown.

Saccharum officinarum L.
Not collected, but observed

Common name: sugar cane, suikerriet.

Kwanyama: *omuenge, oimenge* (pl.) for the plant; *osukka,* sugar from the plant.

Description: canes to 4 m high, looking like bamboo, cultivated, introduced probably from Angola where it is much more common. One sees a few plants in kraals in different locations within Ovamboland. Propagated by short sections of the stem. Apparently not so popular to grow in Ovamboland because more water is needed than available and irrigation would be required.

Uses: 1. Green stems and leaves used for clean-

ing the teeth (Loeb et al., 1956). 2. Men, women, and children enjoy chewing stalks for sugar, and spit out fibers. 3. Crudely refined very dark brown sugar in lumps or rings is sold in a few stores near Oshikango, obtained from a few miles up in Angola. It is eaten as purchased, like candy, or more commonly now added to Kaffir beer to strengthen alcoholic content. More commonly one sees Africans buying a somewhat more highly refined crystalline brown sugar produced in Natal, South Africa. White sugar is also available, but rarely purchased by Africans. Within a few miles of the border as one goes north, there is an abundance of sugar cane. We saw an abundance of their crudely refined sugar at Namacunde, 15 km north of the Angola border. We were told that Africans do not extract and crystallize sugar unless specifically trained by Europeans to do so. We saw an abundance of this sugar sold in rings at Pereira de Ecá, 40 km north of the Angola border, in a large open air market.

Schmidtia kalahariensis Stent.
Rodin 9074

Common name: bushmangrass, boesmangras, kalaharigras.

Kwanyama: *oshinamume.*

Description: annual grass in very dry places, 7–70 or more cm high; no rhizomes or strongly swollen bases; never with clusters of branched hairs, but always spotted with viscous glandular hairs on the stems.

Uses: eaten by cattle and goats.

Sorghum caffrorum P. Beauv. var. *ondongas* (Koern.) Snowdon
Rodin 9157; Loeb F55, F57

S. vulgare Pres. by some authorities

Common names: Kaffir corn, broom corn, milo maize, kafferkoring.

Kwanyama: *oshiliavala, oiliavala* (pl.) for the plants: *olulyavala, oilyavala* (pl.) for the seeds, formerly spelled *oluliavala*: *omwenge,* a green stalk of the plant; *oshihati, oihati* (pl.) for the dry stalks, the plural form is usually used. White seeded form, *oilyavala.* Reddish seeded form, *okalya.* There is also supposed to be a third form.

Description: an unbranched corn-like plant rarely branching at the base, leaves linear, fruit borne in a somewhat open terminal panicle at the top of plant. Height of plant depends upon soil conditions and moisture; with good rains it can be higher than 3 m. Several varieties of seed color can be found in one field, varying from yellow to reddish, but other aspects of the plant are quite uniform.

Uses: 1. It was not used as porridge or bread in 1947, but sometimes in 1973 stamped with *omahangu, Pennisetum typhoïdes,* and made into porridge without salt. 2. Grain is boiled, salted, and eaten as a whole grain. 3. Kaffir beer is made from this grain. In 1947 this was preferred grain and principal use of this grain, but by 1973 *omahangu, Pennisetum typhoïdes,* was preferred. Some areas still prefer making beer from this *Sorghum* grain, and it is common to mix grains for beer making. This Kaffir beer is normally a refreshing and nutritious drink with low alcoholic content, and quite a bit of the flour in suspension. Both *Pennisetum* and *Sorghum* contain all the essential amino acids required for protein development in the human body, whereas *Zea mays* lacks two essential amino acids. Therefore these native grains are more nutritious and healthy for these people. 4. Kaffir beer without fine flour added is sometimes called "rough beer," and is a drink with less alcohol than regular Kaffir beer. This is considered best for children. 5. Green stems and leaves are used to clean teeth (Loeb et al., 1956). See *Diospyros lycioïdes.* 6. Dry stems (*oihati*) are used for making shade, but not for thatching. 7. Dry stalks and leaves are eaten by cattle. According to Watt and Breyer-Brandwijk (1962) the leaves, stems and roots of some forms of *Sorghum* in southern Africa are reported poisonous. Dalziel (1937) also gives similar reports from tropical West Africa, but no reports of cattle poisoning are reported from Ovamboland. Usually the young plants have been reported as poisonous, and only mature dry stalks are fed to cattle in Ovamboland. 8. The Kwanyama people eat young stems (*omuenge*) raw and they are sweet. There is one special variety which is grown just for stalks to be eaten young. See comments in 7 above about poisons.

Tragus racemosus (L.) All.
Rodin 9090

Common names: carrot grass, carrot seed grass, kousgras, lysgras, wortelsandgras.

Kwanyama: unknown.

Description: a very low annual grass.

Uses: unknown.

Tricholaena monachne (Trin.) Stapf & C.E. Hubbard
Rodin 9097a, 9211; *Loeb 226*

Common name: blausaadgras.

Kwanyama: *wanununa*, given by my chief informant and people in kraals nearby; *omuidi*, which was given for this plant by Loeb is also used for *Ennaepogon cenchroïdes*, and should now be spelled *omuwiidi*. This may have been an incorrect application of this Kwanyama name by Loeb.

Description: annual grass to 1 m high, much-branched at base, glumes reddish. Not reported as occurring in Ovamboland by Merxmüller (1966–72).

Uses: 1. Used for thatching huts, but considered inferior to some grasses. Often mixed with other thatching grasses, rather than being used alone. Used because of its abundance in cultivated fields close to their huts, which need to be re-hatched. 2. Sometimes picked, tied in bundles and kept dry in kraals for dry season for cattle fodder when grass is scarce. One of the few grasses harvested for fodder.

Triraphis purpurea Hackel
Rodin 9071; *Loeb 225*

T. fleckii Hackel. Identification given to *Loeb 225* in 1947.

Common names: heuninggras, rooigras.

Kwanyama: *omunashoke, ominashoke* (pl.) formerly *omunasoke, oshoke* (*Rodin 9071*), and *osoke*.

Description: in dense clumps, leaf bases pubescent. Not reported by Merxmüller (1966–72) as occurring in Ovamboland.

Uses: 1. Hats sometimes woven from it. 2. Used for thatching and considered one of four most important thatching grasses.

Urochloa brachyura (Hackel) Stapf
Rodin 9070, 9210

Kwanyama: *epele*.

Description: grass in moist field during the rainy season, annual much-branched from the base, to 60 cm high, stems sometimes reddish.

Uses: food for cattle and goats. Weeded out of the field and fed in cattle enclosure when they come in during the late afternoon.

Vetiveria nigritana (Benth.) Stapf
Rodin 9172 (Ruacana); *Loeb 452, 453, 454*

Kwanyama: *enenge, omanenge* (pl.).

Description: a coarse perennial grass with stout rhizomes, stems to 2 m high; inflorescence a panicle. Dalziel (1937) states this grass is used in West Africa for hoops, hats, toys, baskets, and thatch.

Uses: 1. The aromatic stems, especially below inflorescence, are cut into short sections and hollow stems are strung as beads to be worn around neck according to Loeb et al. (1956). He also states that *olunina*, an unidentified plant, is also cut in 13 mm sections for beads. Cross cuts on sections allow more of fragrance to be released. 2. Powdered roots are boiled in water, cooled, and used as enema for treatment of gonorrhea (Loeb et al., 1956). 3. Powdered roots are boiled in water, cooled and used as enema (Loeb et al., 1956) but they do not make clear purpose other than "alimentary disorders." Presumed to be used for constipation.

Vetiveria zizanoïdes (L.) Nash
Rodin 9133 (Rundu)

Common names: kuskhus grass, muskusgras.

Kwanyama: unknown.

Description: perrenial grass 3 m high with cane-like stems and leaves in 2 ranks, growing near Okovango River. Not listed as a species known in South West Africa by Merxmüller (1966–72).

Uses: the grass is dried and woven into hats according to Philemon, my Kwanyama informant in Rundu.

Zea mays L.
Rodin 2698a

Common names: corn, maize, mealies, mielie, kiepiemielie.

Kwanyama: *epungu* (plant), *omhiku* (ear of mealies), *omuma yepungu* [*omuma* = seed of any plant], seed of mealies.

Description: annual plant with grass-like habit, linear leaves often 45 cm long or more; unisexual flowers both borne on the same plant, male flowers in branched terminal tassels at top of plant, female flowers borne on ears and ovules covered by bracts called husks located in leaf axils; usually 1 or 2 ears per plant bearing many seeds. A cultivated crop introduced from the New World.

Uses: 1. Seeds are eaten fresh on the ear (*omhiku*). 2. Corn meal or mealie meal is now purchased at stores throughout Ovamboland for porridge, which is sometimes made with salt.

Few people grow it as the seeds are too hard to stamp in their wooden mortar and pestles and there is no stone in Ovamboland! Only a few Africans use it almost exclusively and they are usually government employees. A few cases of kwashiorkor disease have occurred in these families according to Dr. J. Gildenhuys, Medical Director of the Oshikati Hospital. In 1973 the first two cases of kwashiorkor were identified in Ovamboland. This disease is caused by a deficiency of two amino acids essential to protein structure in humans; lycine and tryptophane. If meat were eaten regularly, or beans or milk, the disease might not occur. 3. Corn meal (mealie meal) makes a rough beer in which bran from *omahangu* (*Pennisetum*) and some fine flour from *olulyavala* (*Sorghum*) added. It is all boiled, cooled and put into a beer pot which always has some yeast remaining from last batch. It is ready to drink next day. If *omahangu* and fine flour of *olulyavala* are not added, the beer will not be good, according to my informants.

Hydrocharitaceae

Lagarosiphon crispus Rendle
Rodin 9230

Kwanyama: unknown.

Description: submerged aquatic herb, rooted at nodes where it touches soil; leaves linear, ciliate margined; flowers unisexual, monoecious, female 1–3 flowers per spathe with 3 staminodia and an inferior ovary with dichotomous styles; numerous male flowers with 3 staminodia and 3 stamens per flower.

Uses: not used.

Hydrostachyaceae

Hydrostachys polymorpha Klotzsch
Loeb 496

Kwanyama: *oshimbodi-shokomulonga-wa-Nghumbi.*

Description: growing in *oshanas* in moving water, submerged aquatic herb from a stout rhizome; leaves simple, pinnately divided 2–3 times with a sheath and ligule at base; inflorescence a dense spike, flowers in axils of a bract.

Uses: unknown.

Iridaceae

Ferraria glutinosa (Baker) Rendle
Rodin 9360

Kwanyama: *onyen gulushe.*

Description: plant 1 m high in grassy field from large corm 4 cm across, some with secondary corms below; flowers 3.5 cm across, 6 brownish-purple perianth segments with yellow spots and undulating margins, gynandrium with yellow anthers and finely divided filamentous stigmas; outside of perianth greenish, glutinous ring just below inflorescence.

Uses: corms eaten raw or roasted by people, but especially by boys when herding cattle.

Lapeirousia coerulea Schinz
Rodin 9203

Kwanyama: *onyengulushe.*

Description: stems and leaves arise from a somewhat triangular corm in cross-section, flat on the bottom, covered with a fibrous coat, plant ca. 40 cm high, leaves linear 10–30 cm long, 3–4 mm wide; corolla tube 10–14 mm long, 2–4 mm in diameter, lobes of corolla 2–3 mm long, elliptical-lanceolate; capsule triangular.

Uses: corms eaten raw or roasted.

Lapeirousia cyanescens Baker
Rodin 9295a

Kwanyama: *onyengulushe.*

Description: stems arise from deep corm with flat bottom, fibrous covering, stems branched with many terminal flowers, up to 100 cm high; flowers radial, orchid colored tubular, tube 12–15 cm long; corolla lobes 2–3 cm long, 3–6 mm wide; capsule triangular. Merxmüller (1966–72) states flowers are white in this species but mine were orchid.

Uses: corms are eaten raw or roasted.

Lapeirousia vaupeliana Dinter
Rodin 9295

Kwanyama: *onyengulushe.*

Description: stems arise from a deep corm with a flat bottom, fibrous covering, stems branch extensively up to 80 cm high, leaves about 30 cm long, ribbed; flowers terminal in panicles, light orchid; corolla radial, tube 3–5 cm long, corolla lobes narrow-elliptical 10–15 mm long; capsule triangular. Not reported as occurring in Ovamboland by Merxmüller (1966–72).

Uses: corms eaten raw or roasted.

ISOËTACEAE

Isoëtes sp.
Rodin 9383 (Det. Giess)

Kwanyama: *endavo.*
Description: growing in mud by receding waters of an *oshana*; linear leaves 30 cm long arise from round perennial corm; mega and microsporangia are enclosed at the base of different leaves. This appears close to *I. alstonii* Reed and Verdcourt, which is perennial and the only species previously reported from Ovamboland by Merxmüller (1966–72).
Uses: corms eaten raw.

LABIATAE

Acrotome inflata Benth.
Rodin 9142 (Rundu), *9299*; *Loeb 21*

Common names: tumble weed, perdeskrikbossie, vanzylsepluisie.
Kwanyama: *etwelakuku* [grandmother's-head], formerly *etuelakuku.*
Description: annual herb up to 60 cm high, much branched; leaves narrow-elliptical 2–10 cm long, 1–2.5 cm wide, a few teeth, petiole 1.5 cm long; flowers in whorls in axils of upper leaves, corolla bilabiate, almost transparent, a ring of hairs or glands located about the middle corolla tube. 4 stamens inserted at same level, stamens held together by intertwining hairs; minty odor on foliage and stems.
Uses: 1. Tea is made from the leaves, stems and flowers and given to children with upset stomachs. 2. Leaves are chewed and put on a bee sting to relieve pain.

Hemizygia bracteosa (Benth.) Briq.
Rodin 9152 (Rundu), *9163* (south of Rundu)

Ocimum bracteosum Bentham

Kwanyama: *oshive* (by my informant Philemon).
Description: herbaceous annual to 60 cm high, leaves linear-lanceolate to ovate 4–12 cm long, 1–3 cm wide, margins serrate; flowers purple, bilateral, with 3 upper lobes and one lower lobe, 2 stamens on lower lip exserted, 2 others short and included in corolla tube, foliage with pleasant minty odor. Merxmüller (1966–72) states the corolla is white or cream colored, but mine were purple.
Uses: 1. Dried flowers stamped to be used as body powder for a deodorant. 2. Leaves are boiled in water and the tea is drunk as a refreshing beverage.

Leonotis nepetifolia (L.) Aiton
Rodin 9188 (near Ruacana Falls); *Loeb 348*

Common names: wild dagga, wildedagga.
Kwanyama: *etilovalodi.*
Description: herbaceous perennial 1–1.3 m high, leaves opposite, ovate to cordate, 6–12 cm long, 5–7.5 cm wide, pedicels 2–7.5 cm long, pubescent; flowers in dense whorls in axils of a leaf pair, tubular, bilateral, bright orange.
Uses: 1. Branches hung on the entrance cross beam of the kraal for good luck (Loeb et al., 1956). 2. Stems placed behind the kraal owner's seat for good luck (Loeb et al., 1956). 3. My informant said that because of the name of the plant, witch doctors in the past had used it, but their usage is no longer known. 4. In some areas in southern Africa Watt and Breyer-Brandwijk (1962) report dried leaves are mixed with tobacco and smoked as a substitute for dagga or marijuana (*Cannabis sativa*). However, my informants do not known of this custom being followed in Ovamboland.

Leucas martinicensis (Jacq.) R. Br.
Rodin 9096

Common name: tumble weed, bolbossie.
Kwanyama: unknown.
Description: herbaceous perennial 60 cm high, slightly woody at base; leaves 4–9 cm long, 1.5–6 cm wide with an unpleasant somewhat minty odor; flowers bilabiate, in whorls, white corolla but lilac colored tubular calyx with heavy pubescence; nutlets triangular about 2 mm long, gray brown to dark brown.
Uses: leaves and stems boiled to make tea to settle stomach. Watt and Breyer-Brandwijk (1962) also state that many Europeans in the Republic of South Africa drink the tea for colds and women's ailments.

Leucas sexdentata Skan
Loeb 44 (Det. PRE, 1948)

Kwanyama: *okatendepia, outendepia* (pl.), also *okatendepjia* [oka-tende-pia = little-outliner-garden].
Description: straggly plants with whorls of white flowers, upper lip much longer than lower, a ring of hairs within corolla tube, 4 stamens: 2 exserted on lower lip, 2 shorter within the tube;

ovary 4-lobed bearing nutlets; a rather unpleasant minty odor.

Uses: this mint is used to settle stomach of children but Loeb et al. (1956) do not mention parts of the plant used or method of preparation. It may be assumed at least leaves were used for a tea.

Ocimum canum Sims
Rodin 9034

Kwanyama: *endjikaui.*

Description: very similar in appearance to cultivated basil. Cultivated plant in a kraal. Annual plants; leaves usually linear-lanceolate to ovate-lanceolate 1–4.5 cm long, a few separated teeth on the margin, or entire, have a pleasant pungent odor; flowers on stalks up to 25 cm high, corolla rose colored or sometimes bluish-purple, rarely white (white in *Rodin 9034*), corolla always longer than calyx, upper lip 4-lobed, lower lip not lobed. Nutlets present.

Uses: leaves boiled in water for a refreshing tea.

Ocimum simile N.E. Br.
Loeb 575 (Det. PRE, 1948)

Kwanyama: *embodi lomomadi* [big-herb-put-in-fat].

Description: small plant with gland-dotted leaves, inflorescence terminal, spike like, flowers tubular and bilateral, 6 flowers per whorl.

Uses: this close relative to the cultivated basil used for its fragrant minty odor. Loeb et al. (1956) believed an extract of leaves is mixed with red ochre, applied to the skin as a cosmetic.

LEGUMINOSAE

The family as given here includes groups sometimes called subfamilies, and designated by others as plant families. I have kept them in this one family because they all have legumes as fruits, a characteristic found in no other plant family.

Abrus precatorius L. subsp. *africanus* Verd.
Rodin 8941

Common names: crab's eyes, Indian liquorice, love bean, lucky bean.

Kwanyama: *omukene, oikene* (pl.).

Description: herbaceous perennial vine, climbing on shrubs and trees; leaves pinnately compound, 10–16 pairs, leaflets ovate 9–13 mm long, 3–7 mm wide gray-green; flowers in racemes yellow or pinkish; legumes broad about 2–2.5 cm long, 4–6 ovate seeds about 4 mm by 6 mm, scarlet with a black spot, the only seed in Ovamboland with this distinctive red-black color.

Uses: 1. Children play with seeds. If a seed gets up child's nose, he must be taken to a doctor to remove it. 2. My informant did not know the seeds were poisonous.

Seeds are so uniform in size and weight that they have been used in India by jewelers to weigh semi-precious and precious stones. Seed is very poisonous with at least two active chemicals. Watt and Breyer-Brandwijk (1962) report the active ingredients as abric acid and abrin, protein toxins, although others claim two toxalbumins; abrine and abriline are the active compounds. Seeds will not poison humans if swallowed whole, since they pass through the digestive tract undigested, but as little as one-half seed has been known to cause death in humans if chewed. In other parts of southern Africa the plant has many medical applications. Seeds are used as a remedy for venereal diseases, as oral contraceptives, and for killing people; leaf as a vegetable, and for stomach medicine; root as an aphrodisiac. All parts of plant contain some toxic substances.

Acacia albida Del.
Not collected

Common name: anaboom.

Kwanyama: *omyele* (LeRoux, 1971).

Description: tree to 20 m high; bipinnate leaves, 5–10 leaflets per rachilla, each 1–2.5 mm long, young stems and leaves covered with downy pubescence; inflorescence a spike, flowers yellow or cream colored; legumes 2–3 cm wide, brown, bent in a half or whole circle, indehiscent. Not reported by Merxmüller (1966–72) as occurring in Ovamboland.

Uses: bark is stripped off and used like dental floss to clean teeth. It is rumored, but not proved, that bark contains fluorine, which may account for a low rate of cavities among users.

Acacia amboensis: See *A. sieberiana* DC.

Acacia arenaria Schinz
Rodin 8954, 9244

Kwanyama: *omuliamenje.*

Description: tree to 7 m high, spines 1–5 cm long; light green bipinnate leaves to 20 cm long, spherical white inflorescence 1 cm in diameter;

single slender flat legumes 5 mm wide, to 15 cm long, somewhat sickle-shaped, not twisted, only slightly curved.

Uses: 1. Roots boiled to make tea, drunk for coughs and colds. 2. Bark fibers used for threading beads (LeRoux, 1971).

Acacia ataxacantha DC.

Rodin 9311

Common names: Kaffer wag-'n-bietlie, rankroos, rosendornakazie.

Kwanyama: *omunghono,* see *A. mellifera* subsp. *mellifera*; *enghono* (LeRoux, 1971).

Description: tree 25 feet high, or sometimes shrubby; short hook spines not in pairs; pinnately compound leaves, 30–35 leaf pairs per rachis; flowers in spikes, white; 6–12 legumes per inflorescence, each legume 1.7–2.2 cm long, flat, reddish-brown (ex descr. Merxmüller) dehiscent.

Uses: wood used from stems for bows and arrows for archery, especially for boys.

Acacia erubescens Welw. ex Oliver

Not collected

Common names: yellow bark acacia, withaak, berkebasakasia, birkenrindenakazie.

Kwanyama: *okadilanghono* (LeRoux, 1971).

Description: tree or bush up to 8 m high; leaves to 11 cm long, bipinnately compound with 8–17 pinnae, leaflets slightly sickle-shaped, pubescent on lower side and margins; inflorescence a spike 6–10 cm long, sometimes 4 cm long in Ovamboland, white; legumes flat, 1–1.8 cm wide, to 9 cm long, brown, tapering at both ends, thin and brittle, containing 2–5 seeds per legume.

Uses: 1. Branches used for making huts and kraal fences. 2. Bark used to make string, as it is very strong.

Not listed in Merxmuller, 1966–72, as occurring in Ovamboland, but listed by LeRoux, 1967.

Acacia fleckii Schinz

Rodin 9312

A. cinerea Schinz

Common names: sandveld acacia, sandveldakasia, blaardoring, sandveldakazie.

Kwanyama: *omumangandjaba, omimangandjaba* (pl.) [one-that-ties-up-elephants].

Description: trees up to 8 m high; pinnate leaves black or red, plate-like glands on petiole and rachis, 10–22 leaves per rachis; very spiny, spines in pairs and hooked; flowers in spikes to 8 cm long, often shorter, flowers white to pale yellow; legumes several per inflorescence, flat, dehiscent to 2 cm by 10 cm, acuminate at both ends, glandular on margins. Not previously recorded in Ovamboland by Merxmüller (1966–72).

Uses: gates for the animal enclosure by kraal are closed at night with cut branches to keep out carnivorous animals and to prevent thefts.

Acacia giraffae Wild.

Rodin 2626, 8931; *Loeb 476*

Common names: camel thorn, grootdoring, kameelboom-doring, kemeldornbaum, olifantsdoring. The gum exuded is called cape gum by Schery (1972).

Kwanyama: *omuonde, omionde* (pl.) or *omwoonde, eno* (general term for thorn trees in this genus).

Description: beautiful trees 20 or more m high; long straight spines to 7 cm long, almost white; bipinnately compound leaves, each rachilla 3–5 cm long, with 3–4 pairs of leaflets which are oblanceolate-oblong; spherical inflorescence, flowers bright yellow; pods very distinctively thick and woody about 5 cm by 15 cm, somewhat sickle-shaped, covered with persistent velvety gray hairs and rusty glandular hairs; sapwood white, but heartwood very heavy, strong, dark reddish and termite resistant.

Uses: 1. *Omahakasala,* large leguminous pod, is heated in coals of a fire and applied to swellings of body to reduce them. 2. Ashes of wood are put on leg, arm, or feet injuries to heal them. 3. Handles for axes, hoes, and other tools made from stems. 4. Twigs eaten by goats and cattle. Also seed pods eaten by giraffes (White, 1962). 5. Heartwood of larger stems used for knobkerries (Fig. 13b). Also see *Croton gratissimus* and *Euclea divinorum.* 6. Spiny stems piled around kraal to form cattle and goat enclosures where animals are kept at night. 7. Edible gum is exuded and hardens on stems, which is chewed. 8. Seeds crushed in the stamping place to obtain an oil which is mixed with red ochre and smeared on body. Although this was a common practice in 1947, when women's clothing consisted only of skirts, use of such cosmetics has practically disappeared. My informant said its use has disappeared because it is considered a pagan custom. Most people have become Christians and no longer have major portions of their bodies exposed where red ochre was applied. 9. Large poles

used for vertical poles at kraal entrance because it is believed they drive away non-native stinging bees (Loeb et al., 1956).

According to LeRoux (1971) roots used as a cough remedy by Moukushu people of Kavango region. Thin roots up to 1 cm in diameter chopped into about 2.5 cm length, boiled in water until water becomes black. One dessert spoon taken in early morning and one in evening.

Acacia hebeclada DC. subsp. *hebeclada* (ex Merxmüller 1966–72)
Rodin 2671, 9020, (Det. PRE)

Common names: mousebush, blauhaak, ghosbos, muis(doring).

Kwanyama: *omutoka, omitoka* (pl.) or *omutokano* (from Gabriel Taapopi), also *omukamalai, omikamalai* (pl.) [cut-by-fools] because it is so hard to cut, also *eno,* a general term for all *Acacia* or thorn trees.

Description: medium sized trees to ca. 7 m high, sometimes shrubby, in which cases there is much branching from base; pairs of short stipular spines; bipinnate dark green leaves; spherical inflorescence 1.5 cm in diameter, creamy-white to fading white; legumes ca. 15–17 cm long, 12–15 mm wide, thick, not constricted around seeds, erect on stems which distinguishes it from following subspecies.

Uses: 1. Thorny branches used around kraals for cattle enclosures to keep out predators at night. 2. Poles used in making fences for kraals. 3. Wood is strong, used for hoe and axes handles. 4. Straight branches used for making huts. 5. One of the five plants Loeb et al. (1956) listed as exuding edible gums. See *Combretum imberbe.*

Acacia hebeclada DC. subsp. *tristis* (Welw. ex Oliver) Schreiber
Rodin 8955, 9337 (Det. Giess)

Common names: mousebush, blauhaak, ghosbos, muisdoring.

Kwanyama: *omutokano, omitokano* (pl.) often shortened to *omutoka* (according to Gabriel Taapopi), also *eno,* a general name for *Acacias.* LeRoux made an error in his 1971 publication and this is not *omutyuula,* which can be applied only to *A. nilotica.*

Description: tree to 8 m high, sometimes shrub-like; bipinnately compound leaves, glaucous light green, not over 8 cm long; straight spines of variable length; inflorescence spherical 1.5–2 cm in diameter; a number of legumes may be fertile in one inflorescence, legumes to 15 cm long, ca. 2 cm wide each producing ca. 15 seeds, not constricted around seeds, very leathery and pendulant.

Uses: same as for *A. hebeclada* subsp. *hebeclada.*

Acacia mellifera (Vahl) Benth. subsp. *detinens* (Burch.) Brenan
Rodin 9355; Loeb 319

A. detinens Burch.

Common names: hookthorn, haakdoring, swarthaak, wag-a-bietjie.

Kwanyama: *okadilanghono, oudilanghono* (pl.) [little-bird-hooked-thorn-bush], also *eno,* a general term for *Acacia* and thorn trees.

Description: small rounded trees, often bush-like, to 4 m high here, reported to 8 m elsewhere; pairs of sharp hooked black spines at nodes 1–3 cm long; leaves 5–7 cm long, 1–3 pinnae, mostly in 3s, 1–2 pair of somewhat ovate leaflets; inflorescence subcapitate spike, white or cream-colored; legumes somewhat ovate, 2.5–8 cm, flat, dehiscent, gray containing 2–4 seeds, becoming yellow-brown at maturity and papery with distinct fine reticulated veins. Not reported as being in Ovamboland by Merxmüller (1966–72).

Uses: pods eaten when other food is scarce (LeRoux, 1971).

Acacia nilotica (L.) Willd. subsp. *subalata* (Vatke) Brenan
Rodin 2645, 8953, 9324

Common names: black thorn, red heart, lekkerreukpeul, ruikpeul, swartsaaddoring.

Kwanyama: *omutyuula, omityuula* (pl.), formerly spelled *omuchula* or *omitula,* the latter given to me in 1947, also *eno,* a common name for *Acacia* and thorn trees.

Description: tree to 7 m high bearing pairs of straight white spines at nodes, variable length from 1–5 cm long; leaves bipinnately compound, 3–6 pairs of rachillae, 10–24 pairs of pinnae to 6 mm long by 1.5 mm wide; spherical inflorescence bright yellow, 1.2–1.5 cm in diameter; legumes in my specimens 15–20 cm long, straight, swollen over seed, somewhat constricted between seeds, but not always, the swollen fleshy part of legume over seeds filled with a viscous material in green immature pods; thick pods become brownish-black and hard when mature, seeds aromatic.

Uses: 1. Spines used for needles in sewing, both in making of clothing from animal skins, and baskets. See *Hyphaene ventricosa*. 2. Spines used to remove splinters from feet or fingers (Rev. Nathaniel Paulus). 3. Spines used to pierce ears for ear rings (Rev. Nathaniel Paulus).

Merxmüller (1966–72) determined *Rodin 8953* as subsp. *kraussiana* Brenan, but it does not match this subspecies as described in White (1962) and other descriptive material for that subspecies from other areas than South West Africa.

Acacia senegal (L.) Willd. var. *rostrata* Brenan
Rodin 9356

Common names: three-thorned acacia, driedoringakasia, geelhaak, dreidornakazie.

Kwanyama: *enghono*.

Description: tree ca. 5 m high or shrub-like; 3 or rarely 2 hooked spines at each node, one hooked in each direction, spines light-colored; leaves bipinnately compound; 2–5 pairs of rachillae, each rachilla with 7–12 pairs of leaflets; legumes straight, dehiscent, papery, oblong, covered with velvety hairs, 5–7 cm long by 2–2.5 cm wide. This variety not reported from South West Africa by Merxmüller (1966–72).

Uses: branches cut for enclosure at kraal where cattle and goats are kept at night (*oshuunda*).

Acacia sieberana DC.

Not collected, cited in LeRoux (1971)

A. amboensis Schinz

Common name: verveldoring.

Kwanyama: *omeyele, ehaluveya* (LeRoux, 1971).

Description: tree 7–12 m high, rounded or flat-topped, small spines in opposite pairs near end of branches; bark on older branches flaking, outer bark dark gray, when it flakes off new bark underneath is yellowish; leaves bipinnately compound, glabrous or nearly so, leaf rachis up to 8 cm long, one large terminal gland on rachis and several reddish glands on rachis just below it, 9–15 pairs of rachillae to 4.5 cm long, 20–30 pairs of leaflets to 5 mm long on each rachilla; inflorescence capitate, flowers pale yellow fading to white; legumes pendulant twisted, to 15 cm long and 5 cm wide, thick, woody, dark brown and dehiscing very late.

Uses: bark used for threading beads because it has strong fibers.

Acacia tortilis (Forssk.) Hayne subsp. *heteracantha* (Burch.) Brenan
Loeb 219?, 581

A. heteracantha Burch.
A. spirocarpoïdes Engl.

Common names: umbrella thorn, basterkameel (doring), krulpeul, haak-en-steek.

Kwanyama: *kamutaka* [white-thorns], *okano* (from field notes of Loeb), *omushu* (from LeRoux, 1971), *eno*, a general name for all acacias. This particular plant has many Kwanyama names. It may be that names related to uses in past history are not now known.

Description: tree to 10 m high, spines either short and hooked or long and straight to 7 cm long, white, in pairs opposite nodes; leaves bipinnately compound, leaf rachis to 8 cm long, one large terminal gland at apex and several reddish glands on rachis near apex, 9–15 pair rachilla to 4.5 cm long, 20–30 pairs of linear oblong leaflets on each rachillae to 5 mm long; inflorescence capitate, flowers yellow, fading to white; legumes pendulant to 15 cm long, 25 cm wide, thick, woody and dark brown, dehiscing very late.

Uses: 1. Goats browse on it occasionally. 2. Wood used for fires.

According to Watt and Breyer-Brandwijk (1962) in some areas of South Africa used as fodder, but at some seasons is poisonous with some hydrocyanic acid content; also used in other areas as firewood.

Afromosia ?

Kwanyama: *ombishu, embishu* (pl.) [something-eaten-raw].

Description: I did not see this material which might have been *Afromosia angolensis* known in Angola as well as in Zimbabwe and Zambia, but not previously recorded in South West Africa (Merxmüller, 1966–72). PRE regrets it could not identify material collected in 1947.

The collection by Loeb was too poor to keep or to be used for identification of the species.

Albizia anthelmintica Brongn.
Rodin 2673; Loeb 33, 589

Common names: aruboom, kersieblomboom, oumaboom, wurmindenbaum, kirschblütenbaum.

Kwanyama: *omuhanguti, omihanguti* (pl.), most common name used, also *omuama* (Watt

and Breyer-Brandwijk, 1962), *omupopo* [to-drive-out], used when referred to as a medicine for intestinal worms. Older spelling, *omuhanghanguti*.

Description: tree 7 m high, often much-branched from base; leaves bipinnately compound, deciduous, usually 2 pair rachillae, each with 2–5 pair of leaflets, leaflets obovate to obtuse or nearly orbicular; flowers produced before leaflets come out; flowers capitate, calyx and corolla pale yellow-green, stamens white; legumes about 12 cm long, 2.5 cm wide, straight, flat and papery, dehiscent, many-seeded.

Uses: 1. Small branches used by the Kwanyamas as toothbrushes. Frayed ends serve as a means of cleaning teeth. See *Diospyros lycioïdes*. 2. An anthelmintic is a tea from pounded roots, considered a remedy for removing intestinal worms sometimes observed in stools. Watt and Breyer-Brandwijk (1962) say that in East Africa about 60 g is required for the usual dose, made into tea. 3. Tea made from pounded roots considered a remedy for a sick stomach.

Bark and roots used as a remedy in various teas and concoctions according to Watt and Breyer-Brandwijk (1962) in South West Africa and East Africa as far north as Sudan, used particularly for removal of tapeworms, which are digested not ejected whole, as by some anthelmintics. Also utilized by some East Africans as cures or in treatment of venereal diseases, birth contraceptives for women, nervous and stomach complaints, and sometimes as a purgative. Bark, stem, and roots contain a number of active ingredients, but no alkaloids. Results of chemical analysis (Watt & Breyer-Brandwijk, 1962) show a very low haemolytic power in most samples. Saponins, triterpenoid saponin (most active ingredient in anthelmintic treatment), musenin, a saponin-like glucoside, phloroglucin, and kosotoxin are among substances reported isolated.

Albizia versicolor Welw. ex Oliver
Rodin 2609

Kwanyama: *omusheshe, omisheshe* (pl.), *omupako* given incorrectly by Loeb et al. (1956). The latter name should be applied to *Erythrophleum africanum*, a leguminous tree found occasionally in Ovamboland, but not collected by me.

Description: medium sized tree without spines; leaves bipinnately compound, 2–4 pairs of rachillae each bearing 3–6 pairs of leaflets; flowers greenish-yellow, capitate; legumes flat in clusters to 16 cm long by 3.5 cm wide, straight, thin, papery, dehiscent, many-seeded. Very similar vegetative in appearance to *A. antihelmintica* except this species has fine pubescence covering all the leaves.

Uses: 1. My two informants in 1947 did not agree on its use. Jacob said cattle die from eating pods. Viliho said cattle eat the pods but not foliage, which is considered toxic by them. 2. Bark is ground finely, put into cold water and drunk to relieve constipation and to get rid of intestinal worms (LeRoux, 1971). 3. Loeb et al. (1956) stated "a walnut-like thorn tree with leaves which lathers slightly" is taken as a tea made from the leaves for headaches. Since the Kwanyama name is wrong for this botanical species, I believe his suggested remedy should be applied not to this species but to *Erythrophleum africanum* to which the Kwanyama name applies.

Watt and Breyer-Brandwijk (1962) state the tree is used as a purgative or emetic in Zambia, also the Zigula use bark as a headache remedy and other tribes use it medicinally.

Arachis hypogaea L.
Rodin 2694a, 9376

Common names: peanut, monkeynut, goober, groundnut (in U.S.A.), apenut.

Kwanyama: *eembudufukwa* (plant and nut), *oshifukwa*, a field in which peanuts are grown.

Description: introduced cultivated plant of South American origin. Usually is at least a small patch at every kraal and seeds are well liked. Annual, much-branched herbaceous, leaves quadrifoliate, stipules large; flowers inconspicuous but after pollination gynoecium elongates and buries developing legumes in earth where they mature, legumes indehiscent containing 1–4 or 5 seeds, depending somewhat on the variety.

Uses: 1. Seeds eaten raw. 2. Seeds roasted or fried and eaten. 3. Seeds stamped, put in water, stirred and boiled with potherbs (*omuvanda*) and eaten.

Seeds used in many countries as roasted nuts, vegetable oil and one-half the crop in the United States made into peanut butter. Other important economic growing areas are East and West Africa and China. The variety in Kwanyama areas have two to three seeds and grow very well in their sandy soil.

It is interesting to note that when I visited the

kraal of Nehemiah in 1947 he gave me samples of all different kinds of seeds used to grow as crops. Among seeds he gave me was "*eembudufukwa*." Later when I examined these carefully I realized there were two kinds of seeds; my informant told me the harder seeds were groundnuts or *ofukwa*, a native plant similar to peanuts but the seeds required soaking and cooking by boiling or roasting before being eaten. See *Voandzeia subterranea*, for this native African groundnut.

Baikiaea plurijuga Harms
Rodin 2660, 8977

Common names: rhodesian teak, zambezi redwood, rhodesie teak.

Kwanyama: *omupapa, omipapa* (pl.).

Description: large forest tree to 20 or more m high; leaves pinnately compound with 4 or 5 pairs of opposite leaflets on rachis, leaflets linear-elliptical, lower sides covered with fine pubescence; flowers orchid color fading to pink in pendulant racemes to 35 cm long, petals about 3 cm long; legumes flat, woody velvety, about 10–15 cm long, somewhat oblanceolate in shape, dehiscent, pods contain a few seeds.

Uses: 1. Traditionally many kraal fences and huts made from smaller limbs of larger forest trees. 2. Handles for hoes, axes and rakes made from the stems, claimed to be better than *omwoolo* (*Terminalia sericea*). 3. Some prefer to use heartwood from larger trees for stamping block (mortar), although heartwood of *omufyati* (*Colophospermum mopane*) is first choice of others. 4. Wood from larger trees considered an excellent quality lumber, but previously Ovambos lacked tools to handle trees. Now cut and taken to a new sawmill and furniture factory in Oshakati, lumber used for furniture for government offices, hospitals, and schools throughout Ovamboland. 5. Gum secreted from trees in September is remedy against rabies (LeRoux, 1971). 6. Wood from trees now used for manufacturing plowshares (LeRoux, 1971). 7. Drums are made from the trunks (LeRoux, 1971). 8. Snuff boxes carved from wood (LeRoux, 1971). 9. After the trees are felled, bark is stripped off and fed to goats (LeRoux, 1971).

White (1962) says considered cure for syphilis and eye diseases, and wood is used for many purposes: lumber for buildings, furniture, railway cars, etc.

Baphia massaiensis Taub. subsp. *obovata* (Schinz) Brummitt
Rodin 2611, 2667, 2708, 8976, 9011, 9137 (Rundu)

B. obovata Schinz ex White

Kwanyama: *ofufe, eefufe* (pl.).

Description: shrub 1–2 m high but in Ovamboland occurs as a small tree to 4 or 6 m high; leaves simple, obovate, apex usually obtuse or rounded, about 5.5 cm long; single flowers, white with yellow spot at base of petals, calyx rose or pinkish, distinct because 2-lobed; legumes lanceolate, flat, pointed, to 8 cm long with 1–2 seeds.

Uses: 1. Cattle eat both leaves and flowers. In times of drought new leaves come out before rains and serve as food for goats and cattle before other fodder is available. 2. Frames for straightening arrows made from stem wood. 3. Dye made from roots which are crushed and mixed with water for leather hides. Stomach of an ox is added to other skins being dyed until skins and stomach take up red color, usually about one day. Stomach used for an apron by women when it is tanned and stretched out to dry.

LeRoux (1971) states that the Mbukushe tribe of the Okovango region, just east of the Kwanyamas, with many similar tribal customs, use smaller branches for fishing traps. These conical traps are identical to type used by Kwanyamas, and utilize twilling technique. LeRoux also says roots are boiled and left next to fire. Tea from these roots is considered a delicacy by same tribe.

Bauhinia macrantha Oliver
Rodin 2666, 8926, 9136

Common names: koffiebos, kaffeebusch, weisses, zwillinblatt.

Kwanyama: *omutwanghuta, omitwanghuta* (pl.) [snap-of-the-finger], *omutuanuta* is an older form of spelling.

Description: woody plant with two habits: in the open a shrubby bush, in a wooded area a woody vine; leaves almost bijugate being cordate or occasionally rounded at base with a shallow lobed apex, pubescent on both sides, at least in younger leaves; nearly radial flowers, corolla white with reddish claws at base, about 5 cm across, very fragrant, anthers glabrous, 2 staminodia, filaments of stamens glandular pubescent, calyx covered with short pubescence; flat legumes to 16 cm long, linear-lanceolate, pubescent when

young; tips of many branches hooked, which is a very distinctive feature.

Uses: 1. Leaves eaten by cattle. 2. Children like to pick flowers and suck out nectar. 3. Loeb et al. (1956) claimed a bitter tasting brown dye is produced by root, used as a cough medicine. My informants knew nothing of this remedy. However, *Philostigma thonningii,* a very similar appearing plant and flower has bark which is used for coughs. Since Loeb has no voucher, I suspect a misidentification was made.

Bolusia amboensis (Schinz) Harms
Loeb 118

Kwanyama: *oshibandanga, iobandanga* (pl.). Also see *Indigofera alternans*. Formerly spelled *osibandanga.*

Description: herbaceous perennials with long tap roots and sometimes woody at the base; small deciduous trifoliate leaves, elliptical, ovate to spatulate, blades about 2.5 cm long, petioles 3–10 mm long; flowers white to greenish-yellow, standard 6–9 mm long, widely ovate; calyx with irregular sized lobing, 5–6 mm long with short tube at base, 5 lobed; 5 long and 5 short filaments on stamens, diadelphous; legumes oblong, yellowish, twisted, turgid, many-seeded, 2.5 cm long, dehiscent when dry.

Uses: unknown.

Burkea africana Hook.
Rodin 9002, 9135; Loeb 417, 419

Common names: rhodesian ash, seringa tree, geelsering(hout), sandsering, wildesering.

Kwanyama: *omutundungu, omitundungu* (pl.).

Description: medium sized tree to 15 m high, distinctive because twigs and buds densely covered with rust-reddish colored hairs; leaves bipinnately compound, 1–3, usually 2 pair of rachillae, 5–9 pairs of leaflets per rachilla, silky when young, glabrous later, leaflets 2–6 cm long, 3 cm wide, obliquely-elliptical; flowers in simple or paniculate spikes to 18 cm long, white, 3.5–5 mm long, 10 free stamens; legumes flat 5 cm long by 2.5 cm wide, leathery, elliptical, 1-seeded, indehiscent. Not reported previously from Ovamboland by Merxmüller (1966–72).

Uses: 1. Stamping block for grinding grain is made from its trunk. Mortar is made from very hard heartwood and is most frequently partly embedded in soil at the stamping place. It is surrounded with a clay-like material, obtained from nest of termites made into a moist plaster. It helps secure the mortar, and flattened surface surrounding mortar is very smooth and hard from this clay when it dries. It is then easy to pick up or sweep up flour and partially ground grain that comes out of mortar during the grinding process. Special brooms or brushes are made for this purpose. Some mortars are not embedded and can be moved to shady spots in the heat of the day or into the cooking hut on a rainy day and kept with rest of utensils. 2. Bark or leaves were put into kaffir beer to make it stronger. This practice is now forbidden by the government. 3. Bark crushed and put into fermenting fruit to be distilled as brandy (*olambika*) is said to improve the flavor. 4. Trunks used as three sitting logs in main sitting place. *Omufyati, Colophospermum mopane* may also be used (Loeb et al., 1956). In 1973 these species are still in use. 5. This species produced an edible gum, sometimes increased by making injuries to bark so more gum will be produced. Loeb et al. (1956), listed this as one of five plants that produced edible gums. See *Combretum imberbe* for details. 6. Smaller branches used for fences around the kraal. 7. According to LeRoux (1971) bark of roots is ground and placed on an ox stomach to give it red color. After curing it is worn as a pair of pants. I believe this species may be used as a mordant with another vegetable dye such as the roots or heartwood of *omuuva, Pterocarpus angolensis,* chief source of the red ochre dye used in tanning hides and cow stomachs. Ovambos never made pants from skins, for both men and women preferred skirts or aprons, and women prefer cow stomach rather than heavier cow hides. This information was in agreement with my informants' knowledge of the subject.

According to White (1962) wood is not termite resistant, but used for stamping blocks (mortar) in Zambia and for mining timbers and for wagons.

Cassia italica (Mill.) Lam. ex F.W. Andrews subsp. *micrantha* Brenan
Rodin 9214; Loeb 204, 205, 273

C. obovata Collad. var. *pallidiflora* Dinter

Common names: senegal, tripoli, or italian senna, wild senna, eland's pea, grondboontjie, elandsjertjie.

Kwanyama: *odiva* (1973), also see *Abutilon angulatum*; *okatundungu, outundungu* (pl.). Loeb's collection identified as *C. obovata* in 1947–

48. The prefix "*oka*" indicates a small form of the plant.

Description: perennial plant, herbaceous stems nearly prostrate, sometimes woody at base; leaves pinnately compound, 3–7 leaf-pairs, leaflets ovate, 7–20 mm long, lower side yellowish, upper side gray-green, stems and leaves very pubescent; flowers cream colored 9–10 mm long, almost radial (not papilionaceous); legumes very flat, 3–6 cm long, 1–2 cm wide.

Uses: 1. Tea made by boiling flowers in water; when it is cool, given to a pregnant woman just before a child is delivered (presumably when she is in labor), to bring forth the child quickly. 2. Loeb et al. (1956) state that it is given to children for an upset stomach, but the details about what part of plant is utilized are not given.

This is quite different from applications by Africans in other parts of southern Africa who usually use it as a laxative. Its leaves are also source of a commercial laxative, "senna" (Watt & Breyer-Brandwijk, 1962). It is also reported to be toxic to livestock that graze on it in some areas of southern Africa. It may be that seeds contain metabolic toxins, or that older plants accumulate some poisonous element such as selenium, but no tests have yet been made to discover poison elements in toxic forms.

Cassia occidentalis L.
Rodin 8969

Common names: negro coffee (Trinidad), stinking weed (Virgin Islands), wild coffee (Trinidad).

Kwanyama: *omutiwojoka, omitiwojika* (pl.) [medicine-for-snakes].

Description: soft woody perennial less than 1 m high, branching mostly from base near long tap root; leaves compound, 3–6 pairs of leaflets, lanceolate or lanceolate-elliptical 3.5–10 cm long, 1.5–3 cm wide, one very large conspicuous gland at the base of petiole, leaves and pods glabrous although Merxmüller (1966–72) says there are short glandular hairs on lower side; flowers nearly radial in few flowered short racemes, yellow; legumes flat, linear-elongate to 14 cm long by 1 cm wide.

Uses: 1. Roots chewed to relieve a cough, chest pains, or pains in liver (Canon Gabriel Nameuja). 2. If planted in a kraal, snakes will never come in (Canon Gabriel Nameuja).

In other tropical areas, especially in West Indies and western central Africa, used for many different illnesses according to Watt and Breyer-Brandwijk (1962). One includes using seeds as coffee, which must be roasted before being ground to destroy some toxalbumin and possibly other toxic substances. One European missionary found the coffee was a cure for a heart condition that had been diagnosed by physicians as incurable. Used by Africans and others as a remedy for snakebite, relief from cramps, haemoglobin disorders, to improve appetite, to relieve abdominal pains, as an anthelmintic for roundworms, etc.

Colophospermum mopane (Kirk)
Rodin 2623, 8963, 9041; Loeb 195, 196

Copaifera mopane Kirk

Common names: mopane, rhodesian ironwood, mopaniehout.

Kwanyama: *omufyati, omifyati* (pl.) [man-dead-said], an idiom meaning: dead man returns to life; formerly *omufiati,* and in older German texts *omufiadi.* This Kwanyama name is not really pronounced by most people as it is spelled above. The "u" is very short, hardly uttered, and "fy" is pronounced with an "s" sound, the "a" is a long "a," so that more logically the spelling would be *omusaadi.*

Description: evergreen trees ca. 10 m high, frequently in dense stands with very straight trunks which in overgrazed areas sometimes take on a bushy appearance from being grazed upon; leaves unijugate with one pair of leaflets, asymmetrical with outer margin of leaf cordate, inner margins slightly convex, 5–10 cm long, pellucid punctate; flowers in slender racemes, not conspicuous being apetalous with 4 small sepals or perianth segments 5 mm long, stamens 20–25, free; legumes kidney-shaped, yellow-brownish, leathery, flat 3–5 cm long by 2–3 cm wide, 1-seeded, indehiscent, seed very crinkled or folded within seed coat. Seeds not edible, but one of most useful trees in Ovamboland.

Uses: 1. Bark used for tying kraal fences and hut frames together, and to hold thatch on roof. Bark is stripped off limbs used in hut construction and pulled back and forth across a small limb, usually held by bare feet on ground. This decreases stiffness. Sometimes dried and later soaked in water before using. 2. Bark divided into fine strands which may be twisted, plaited or braided for twine or rope for many uses in kraal, as recovery of harpoons. 3. Trunks used for supports for huts. 4. Smaller branches or trunks of smaller trees that grow in clumps used

for roof frame on which thatch is later tied. See Fig. 3. 5. Smaller trees or limbs are used for poles in fences of palisaded wall of the kraal. Wood is so hard nails cannot be driven through it. Smaller poles mostly composed of sapwood and eventually attacked by termites. They must be cut fresh every time the kraal moved which was every three or four years (1947), but now kraals are becoming more stabilized and poles simply replaced every few years (1973). 6. Heartwood of larger trees used for pestle (*omushi*) in grinding grain for stamping place (Fig. 11). Since no stones are found in the country, stone mortar and pestles are unknown. All soil of Ovamboland is sandy. The mortar, *Burkea africana* (*oshini* or *osini*) is also made from a very hard native wood. There are two styles of pestles: those with round plain top (*emusi*), used only for grinding grain, and another type with a square block left on top (*emisi*). This latter type used for grinding grain, but is inverted and square end ca. 18 cm square used to thresh grain. The pole itself is ca. 2 m long and 6–8 cm in diameter. 7. Small branches and twigs or from *omuolo, Terminalia sericea,* used in making the large storage baskets for storing grain, *emanda, omanda* (pl.) or sometimes spelled *omaanda* (Bruwer, 1961) (Fig. 4). 8. Axe and hoe handles made from stem wood. 9. Two forked sticks have traditionally been placed at entrance of kraal and a cross-stick placed in crotches. Although *omunghama, Terminalia prunoïdes,* or *omupalala, Peltophorum africanum,* are preferred, *mopane* may be used also as a third choice. 10. A large green tree used to keep sacred fire (*omusati-omtarara*) which was maintained in the sacred hearth of each kraal. This fire is supposed to ensure health, abundance, and fertility of members of kraal. It was started from the King's fire for each headman, then every kraal owner got his fire from his headman. Fire is maintained by first wife (headwife) of that kraal. When a king died in olden times fires were all allowed to die out, and new ones started for new king. This fire cannot be used to warm one's self or for any other household usage except to start other fires. It is always located facing the door of sleeping hut of first wife. Only green wood used for fire (*osifonono*) which never burns with a flame, only smolders. If two logs are placed next to each other, fire does not go out and burns very slowly (Hahn, 1928). Since last sacred king was killed in 1917, the custom has gradually changed. In Bruwer's time (1961) he states that although the custom had lost much of its significance as a ritual and sentiment, it was still traditional and was kept in kraals of many headmen and other families as a special fire. Loeb et al. had also (1956) associated some of customs at an earlier time involving vestal virgins who tended the fire, but this was not true in 1948 where first wife had the responsibility. In 1973 I rarely saw such a sacred fire. My informant said, "Now we have matches, why do we need to cut green mopane logs to keep a fire going? Matches are cheap." He explained they now make a new fire every morning. Associated with fire traditionally were cattle horns attached to skulls, bleached and dry, attached to an adjacent fence. Many of these horned skulls are still hung in Christian kraals, as my informant said, "For good luck." 11. Dry mopane wood consisting of stems, is excellent for slow-burning but hot fires in kraals. Dry wood is called *oshikumi.* 12. During ceremony celebrating opening of a new kraal, all people walk over twigs and three other sacred plants (Loeb, 1955a–c). See *endobo, Aloë esculenta.* My informant stated that this pagan custom has now been abandoned and celebrating a new kraal now consists of drinking Kaffir beer, singing, and dancing. 13. Mopane is one of five royal sacred trees of tradition planted in kraals in entrance grounds. Five species of trees are considered sacred because an early king who migrated to this area made his first hut by tying together trunks of these species which presumably were growing in a circle (Loeb et al., 1956). Loeb lists five species: *Colophospermum mopane, Terminalia sericea, Peltophorum africanum, Commiphora* sp., and *omuala,* an unidentified plant. No plant by this name was collected and my informant, Mr. Gabriel Taapopi, in Windhoek, claimed that in different areas of the territory different tree species are claimed as five types. He further stated that *omala* is not the name of a tree, but the magic use put to some of the so-called sacred trees as a food purifier. 14. Good luck charms made and worn by women at fishing parties, by boys at roundups; each boy returning from roundups places a branch on stockade wall nearest sacred fire (Loeb et al., 1956). 15. A resinous gum is exuded from branches when heated in a fire and when cool applied a couple of times to infectious wounds that won't heal (Loeb et al., 1956). 16. Trunks used for three sitting logs around fire in main sitting place (*olupale*), especially if *omutundungu, Burkea africana* is not available. 17. Leaf is used as a whistle called *oshiva* (called *ochia* by Hahn, 1928). Whistle is

used by both Christians and non-Christians at weddings. 18. A special ceremony in olden times called *ita twalua* [war-is-born-today], prepared men for battle. Just before entering enemy area a sapling while still planted was split lengthwise in two halves. Each soldier must step over this. Then each chief or king takes his position at head of his men (Hahn, 1928). 19. Carved knobkerries are made from its heartwood (Fig. 13b). 20. According to Warneck (1910) if a man of nobility has a bad dream, or is worried or anxious, he throws coals into a pot, and places mopane leaves on the coals. When smoke envelops his head, evil spirits causing the trouble will be driven away.

Crotolaria podocarpa DC.
Rodin 8981

Kwanyama: unknown.

Description: prostrate spreading herbaceous plant; leaves palmately trifoliate, leaflets linear-lanceolate to ovate or obtuse ovate to 50 mm long by 20 mm wide, stipules foliate but not attached to base of petiole, stipules 1-lobed, asymmetrical-lanceolate or somewhat sickle-shaped; inflorescence a raceme, flowers yellow, papilionaceous, monodelphous with a split down one side, keel L-shaped beaked and twisted, large and showy; legumes broad somewhat turgid, almost cylindrical, glabrous, to 25 mm long by 12 mm wide, dehiscent and many-seeded.

Uses: not eaten by humans, but eaten by goats.

Crotalaria sphaerocarpa Perr. ex DC.
Rodin 8989, 9184 (*Ruacana*); *Loeb 137*
C. nubica Benth. (*Loeb 137*)

Kwanyama: *oshipundula, oipundula* (pl.), formerly *osipundula.*

Description: erect branching herbaceous annual; stems, under side of leaves and petioles, which are ca. 10–30 mm long covered with short pubescence; leaves palmately trifoliate, stipules present, leaflets lanceolate to elliptical 15–90 mm long, 2–10 mm wide; flowers yellow, papilionaceous, monodelphous, split down one side, keel beaked, L-shaped, banner and keel 3–6 mm long, legumes nearly cylindrical, 4–6 mm long, 3–5 mm thick, covered with short pubescence, somewhat turgid and thick, many-seeded. Roundish pods of this species help to distinguish it from the more elongated pods of the previous species.

Uses: unknown.

Watt and Breyer-Brandwijk (1962) state many species of this genus are used as forage by cattle, but that a few of 300 species in Africa are quite toxic and at least nine or more alkaloids which might produce toxicity have been discovered in different species. In a few places in southern Africa it has been used medicinally. However, toxicity causes serious difficulty to lungs and liver in toxic species.

Dialium engleranum Henriques
Rodin 2658; *Loeb 380, F2*
D. simsii Phillips ex White (1962)

Kwanyama: *omufimba, omifimba* (pl.).

Description: tree up to 15 m high, spreading but rounded, bark on trunk furrowed peeling in thin flakes; leaves pinnately compound with 7–11 opposite leaflets to 12.5 cm long by 3 cm wide, but usually smaller, ovate-lanceolate or narrowly elliptical, coriaceous, slightly pubescent, small dehiscent stipules; inflorescence a branched panicle, flowers small, white, Merxmüller states there are 5 nearly radial petals and 5 stamens, but White (1962) states there is 1 petal and 1 stamen for this species in Zambia; legumes to 3 cm long, flat indehiscent ovate-elliptical, 1 or rarely 2-seeded, indehiscent, dark chocolate colored pod. Merxmüller (1966–72) has not reported this species as occurring in Ovamboland.

Uses: 1. Dried seeds kept for the rainy season, when boiled and eaten. 2. Fruit added to milk to give it a pleasant flavor. 3. Wood of stems makes good lumber, although not too much is used. 4. Wood used for carving objects like knife handles. 5. LeRoux (1971) reports fresh seeds are eaten raw.

Dicrostachys cinerea (L.) Wight & Arnott subsp. *africana* Brenan & Brummitt
Rodin 2670, 9027, 9317, 9320
D. nutans (Pers.) Benth.
D. glomerata (Forssk.) Chiov.

Common names: bastard acacia, Chinese lantern tree, sekelbos.

Kwanyama: *ongete, eengete* (pl.).

Description: small tree up to 7 m high with long thorns; leaves bipinnately compound, 5–12 pairs of rachillae each with 15–30 leaflet pairs 2–4 mm long by 0.5–1 mm wide; one gland on rachis between each pair of rachillae; inflorescence in dense spikes similar to some species of *Acacia,* flowers very small with campanulate calyx and corolla, apical area of spike yellow with somewhat longer stamens and containing bisex-

ual flowers, basal portion of spike has pink or purplish flowers, sterile; legumes flat, 12–14 cm long, contorted, quite a number crowded from one inflorescence, woody and indehiscent, seeds obovate, compressed.

Uses: 1. Stem wood used for archery bows. 2. Stems make good firewood. 3. Sometimes carved into knobkerries, but very hard wood, and now rarely used.

Elephantorrhiza suffruticosa Schinz
Rodin 9285 (WIND only)

Common names: basbos, looibos, looiwortel (bos), gerbwurtzelstrauch.

Kwanyama: *omubalandongo, omibalandongo* (pl.).

Description: usually a bush, but *Rodin 9285* was from a tree 5 m high; leaves bipinnately compound with distinctive swellings at base of petiole, leaflets 9–12 mm long, 2–2.5 mm wide, about 10–12 pair of rachillae bearing 20–25 pairs of leaflets; inflorescence a cylindrical raceme or sub-spike, flowers with 5 sepals up to 2.5 mm long, corolla 5-merous nearly radial, about 3–4 mm long, stamens 10, free, yellow, about twice as long as corolla; legumes linear to oblong, thick and leathery 15–22 cm long, seeds large and thick, frequently compressed.

Uses: roots red and used as red dye for cow stomachs, worn by women as aprons (Canon Gabriel Nameuja). Once these aprons or skirts were principal clothing worn by women, one in front and one in back, but most women wear cloth dresses now (1973).

Entada arenaria Schinz ?
Loeb 586

Kwanyama: *omubalandongo.* See also *Elephantorrhiza suffruticosa.*

Description: small tree to 10 m high, somewhat unbrella-shaped; leaves bipinnately compound 25–30 cm long, distinguished vegetatively from *Burkea* by having no velvet pubescence on twigs; flowers creamy-white, fading yellowish on racemes 8–10 cm long; legumes oblong, rounded, sickle-formed, flat, from 13–26 cm long, crenate undulate margins.

Uses: mixed with *Portulaca oleracea* after birth of twins to prevent swelling (Loeb et al., 1956). See *Portulaca oleracea* for details.

This specimen was not identified with certainty in 1948, but close to *E. abyssinica* Steud. I have not seen the specimen, but *E. arenaria* is known from Grootfontein area just to the south, and is the only species known in South West Africa, so I strongly suspect Mrs. Loeb's specimen was *E. arenaria.*

Erythrophleum africanum (Welw. & Benth.) Harms
Not collected

Common name: ambo-kiaat (LeRoux, 1971).

Kwanyama: *omupako, omipako* (pl.). Mistakenly identified by Loeb et al. (1956) as *Albizia versicolor.* See LeRoux, 1971. *Mubako* is one tribal name in Zambia (White, 1962).

Description: tree 6–9 m high; leaves bipinnately compound, leaflets ovate to elliptical, leathery, often alternate on pinnae, 3–4 pairs of rachillae; flowers small, yellow-green on a dense spike up to 6 cm long, anthers reddish; legumes ca. 20 cm long by 4 cm wide, thin, oblong, containing 4–5 seeds, narrowed at base, dehiscent.

Uses: 1. Loeb et al. (1956) state its leaves used as a remedy for headache, but how it is applied (externally, or taken internally as a tea) is not revealed. See 2 below. 2. Mistakenly identified as *Albizia versicolor* for Loeb et al.'s paper (1956: 161). Watt and Breyer-Brandwijk (1962) indicated gum exuded is poisonous and has toxic alkaloids. In some parts of Africa used medicinally. Loeb states that in Ovamboland it had a poisonous resin and if eaten by mistake, an antidote is obtained from the tuber of an unidentified plant called *omubutu.* I could not locate this plant.

Guibourtia coleosperma (Benth.) J. Léon
Rodin 8994, 9156 (Rundu)

Common names: rhodesian mahogany, rooisering (boom), chivi (Afrikaans), schivi (German).

Kwanyama: *omusii, omisii* (pl.) [big-thorns], an odd name, since this tree has no thorns. My informant in Rundu area, an Ovambo Kwanyama, Philemon Malawa, could not explain way.

Description: tree to 23 m high, bark smooth light tan, sometimes a little reddish-brown; compound leaves with 1 pair of sickle-shaped or obliquely ovate leaflets, glabrous, finely pellucid punctate, 3–10 cm long, somewhat leathery; inflorescence a raceme or panicle in the leaf axils, 4–12 cm long, perianth almost radial, 1 cm in diameter covered with white pubescence on the inside, true petals absent, stamens 10, free; le-

gumes semi-orbicular or kidney-shaped, non-woody, 2–3 cm long by 1.5 cm wide, 1-seeded, dehiscent, seed covered by a red or yellow-reddish fleshy aril.

Uses: 1. Seeds dried and later soaked and cooked for food. 2. Seeds cooked and stamped to obtain an oil for cooking and cosmetics. 3. Trunks important as lumber and for wood carving of utensils, etc. 4. Seeds dried for food, prepared by soaking in water and then frying in oil. 5. Gum secreted in September added to food of enemy to poison him (LeRoux, 1971). No mention of gum given by Watt and Breyer-Brandwijk (1962), but a number of tribes in south and eastern Central Africa eat aril, either fresh and red, or dried and brown. Kwanyamas do not eat the aril.

Africans near Rundu carve wood into stools, drums, and many artistic statues of birds, etc.

Indigofera alternans DC.
Loeb 136

Kwanyama: *oshimbadanga* [toddling-about], formerly *osimbadanga*. See also *I. bolusia, Loeb 258.*

Description: prostrate mat-forming annual; leaves compound, terminal leaflet oblong-ovate, 7–13 leaflets 5–11 mm long, 2–6 mm wide, stipules small; flowers papilionaceous, standard glabrous, keel not beaked, pink, red or red-lilac; legumes flat, 6–10 mm long, 3–many seeded. Not reported from Ovamboland by Merxmüller (1966–72).

Uses: not used.

Indigofera arrecta Hochst.
Loeb 381

Common names: natal indigo, verfbossie.

Kwanyama: *okalambananghole, oulambananghole* (pl.) [to-follow-caterpillar].

Description: shrub to 3 m high; leaves pinnately compound, each rachilla with 12–17 leaflets, obovate or elliptical about 1–1.5 cm long, pubescence gray, black when dried; racemes to 2.5 cm long, flowers pink to red, 0.6 cm long; legumes torulose, cylindrical, constricted between seeds, about 2 cm long, 4–6 seeded.

Uses: this dye may never have been used by Kwanyamas because they never wove and dyed cotton. They used only red ochre in vegetable fats or butter on their cow stomachs or cowhide aprons and skirts until recently, and now dresses and cotton trousers are mostly purchased in native stores or by mail order ready-to-wear.

Dalziel (1937) did not mention use as blue dye, although widely used as such, especially on cotton cloth, throughout Africa, India, and Ceylon; with *I. tinctoria* this is richest source of blue indigo dye. Watt and Breyer-Brandwijk (1962) state active dye ingredient is ingotin, a glucoside, which is antiseptic and astringent.

Indigofera astragalina DC.
Rodin 9234; *Loeb 159*

Kwanyama: *okambadanga, oumbadanga* (pl.) [little-toddling-about].

Description: erect or straggling green-gray annual ca. 50 cm high (Merxmüller, 1966–72) but *Rodin 9234* ca. 120 cm high; leaves compound, leaflets 3–11, 10–18 mm long, 3–5 mm wide, pubescent on both sides, terminal leaflet larger, narrow-elliptical to lanceolate; flowers papilionaceous, pink or red on racemes ca. 2.5 cm long; young legumes white pubescent, 4-sided, ca. 21 mm long, 2–6-seeded. Presence of minute dark glandular dots on upper leaf surface is distinctive.

Uses: added to fodder it will sicken cattle (Loeb et al., 1956).

Indigofera daleoïdes Benth.
Loeb 155, 397

Kwanyama: *okanakafukwa* [look-like-*ofukwa*], *ofukwa* is the groundnut. *Voandzeia subterranea* formerly *okanakafukua*. See also *Tephrosia lupinifolia.*

Description: herbaceous, erect, sometimes slightly woody at base; leaves compound, 8–21 obovate to elliptical or cuneate leaflets, terminal leaflet to 12 mm long, somewhat smaller than the other leaflets; papilionaceous flowers pink or red; legumes quadrangular or cylindrical, ca. 3 or more seeds.

Uses: short pieces of root usually 10–15 cm long and ca. 0.75–1 cm in diameter chewed to expose fibers, which are then used as a toothbrush. Such a toothbrush is used for some time; said to increase attractiveness when meeting opposite sex (Loeb et al., 1956). See *Diospyros pallens.*

Indigofera flavicans Baker
Rodin 8925; *Loeb 526*

Kwanyama: *oshiteyatemo, oiteyatemo* (pl.)

[things-break-hoe], formerly *ositeiatemo*. My informant did not know the Kwanyama name; it came from Loeb's collection.

Description: several prostrate branches radiate from a taproot; leaves compound composed of one terminal leaflet 20–50 mm long by 12–30 mm wide; one reduced basal leaflet only; flowers papilionaceous, rose-red, or darker red; legumes 8–15 mm long, cylindrical or somewhat quadrangular, 2–3 seeded.

Uses: an infusion of roots taken to stop vomiting (Loeb et al., 1956).

Indigofera microcarpa Desv.
Loeb 580

Kwanyama: *okajala*.

Description: a semi-prostrate perennial; compound leaves densely gland dotted, covered with appressed modified hairs; flowers papilionaceous, carmine-pink. This species was not reported to be present in South West Africa by Merxmüller (1966–72).

Uses: unknown.

Indigofera sp. cf. *I. charleriana* Schinz
Loeb 258

I. scaberrima Schinz

Kwanyama: unknown.

Description: herbaceous plant; leaves compound, 3–7 leaflets pubescent on upper side; inflorescence to 10 cm long, papilionaceous flowers red, pink or reddish-lilac, standard pubescent, keel not beaked; legumes flat, more or less sickle-shaped, 10–15 mm long by 2.5 mm wide, many-seeded.

Uses: unknown.

Loeb et al. stated (1956: 160) that a disease called *omukoneko* has symptoms of yaws including hardened red excrescences in the mouth, on palms of hands and often bleeding from nose and swelling of body. Loeb says one of four plants used for a cure for these symptoms in Ovamboland compares to related species of *Indigofera* which are used in Gold Coast area, by applying the expressed juice on yaws. Only *I. dendroïdes* Jacq. and *I. hirsuta* L. recorded in the literature as used in that part of Africa for yaws symptoms. Neither species occurs in Ovamboland, and the species which might have been used is not identified by Loeb.

Determined by PRE in 1947 as very close to *I. scaberrima*, which has subsequently been made a synonym of *I. charleriana*, which has been collected by others in Ovamboland, where type specimen was collected.

Lonchocarpus nelsii (Schinz) Schinz ex Heering
Rodin 9057

Common names: panda tree, appelblaar, apfelblatt(baum), Herrero omupanda.

Kwanyama: *omupanda*.

Description: tree sometimes growing to 12 m high; simple leaves ovate to cordate, 5–11 cm long, lower side distinctly reticulately veined, young buds heavily pubescent; inflorescence a panicle, flowers papilionaceous, bluish-lavender, stamens 10, filaments are fused into a tube most of their length; legumes unwinged, 4–8 cm long, apex rounded or somewhat mucronate, flat, leathery, dehiscent. Not previously been reported from Ovamboland by Merxmüller (1966–72).

Uses: tree trunks used for three logs around a fire in sitting place where guests are seated, or family may gather, especially in evenings.

Lotononis sp. cf. *L. leobordea* Benth.
Loeb 509

No other information available. No species of this genus known from Ovamboland according to Merxmüller (1966–72).

Mimosa pigra L.
Rodin 9171 (near Ruacana Falls)

Common names: mimosa, sensitive plant.

Kwanyama: unknown. Known by Himbas to west as *omuzuvakuvare* and by Kwangalis in east (Okovango) as *vambara-vambara* [the captain's-men-are-coming-and-he-is-now-hiding] i.e., the leaves wilt. It is interesting that no Ovambo languages have a name for this tree.

Description: prickly shrub or small tree to 3 m high (White, 1962), but 5 m in Ovamboland; bipinnately compound leaves to 15 cm long, about 8–12 rachillae each bearing about 35 pairs of leaflets, linear with setose margins about 1 cm long, sensitive, so they fold into closed pairs when touched; inflorescence a spherical compact head with insignificant corolla and calyx, 10 stamens, flowers pink to white in Zimbabwe (White, 1962), but rose to dark purple according to Merxmüller (1966–72), in Ovamboland they were purple, including corolla and stamen filaments.

Uses: unknown.

Mundulea sericea (Willd.) A. Chev.
Rodin 9114; Loeb 37, 272, 306, 362

M. suberosa (DC.) Benth.

Common names: cork bush, silver bush, kurkbos, visgif, fischbohne, fischgift.

Kwanyama: *omubanganyana* or *omumbanganyana.*

Description: shrub 1–2 m high in Ovamboland, according to White (1962) to 7 m high, young shoots covered with silvery pubescence; pinnately compound leaves, 2–10 pairs of leaflets, each about 2.4 cm long, ovate to lanceolate; inflorescence a dense terminal raceme to 15 cm long; papilionaceous flowers, blue to reddish to lilac according to Merxmüller (1966–72), my collection was lilac colored, to 2 cm long; legumes flat with thickened sutures, subtorulose 4–10 cm long, only somewhat dehiscent, covered with brownish velvety pubescence.

Uses: 1. Sticks used to beat calves to keep them from cows which are being milked. Another plant used for this purpose is *omumbu,* which has not been identified. 2. Known as a tree that provides medicine, but my informants could not tell me how it was used or what parts. According to Watt and Breyer-Brandwijk (1962) the bark of this plant is used in southern Africa and even India as a fish poison and is poisonous to humans because of toxic glucosides; also used in some areas as an insecticide, somewhat similar to *Derris,* this also contains rotenone. It has been used by some doctors in magic charms, but not as a medicine.

Otoptera burchellii DC.
Loeb 505

Vigna burchellii (DC.) Harvey

Common name: beesboontjie.

Kwanyama: *omalakaka* (pl. and only plural used) or *olukata* [to-shake] or [to-stop-diarrhea].

Description: herbaceous, or climbing vine-like, or somewhat erect and shrub-like to 1 m high; leaves trifoliate, leaflets ovate to lanceolate, each leaflet subtended by small but distinct pair of linear stipules, terminal leaflet on longer stalk than the pair and slightly larger than lateral leaflets, terminal leaflet 5–7 cm long; flowers papilionaceous, 2–4 cm long, terminal on axillary branches, standard orbicular or shield-shaped, greenish-yellow to white on outside, reddish-purple with green spots or flecks on the inside, wings and keel also reddish purple; legumes linear, straight, 5–9 cm long, grayish-yellow, glabrous, dehiscent.

Uses: a tea made from leaves to stop diarrhea (Gabriel Taapopi).

See Hutchinson (1946: 301) for an illustration.

Peltophorum africanum Sond.
Rodin 2610, 8942

Common names: African (black) wattle, Rhodesian (black) wattle, huilboom, rooikiaathout, Transvaalewattel, wildewattel.

Kwanyama: *omupalala.*

Description: graceful spreading tree to 12 m high, young branches covered with rust-colored soft pubescence; leaves bipinnately compound, 4–11 pair of rachillae, usually ca. 5 pairs, each pair with 10–20 pairs of elliptical to lanceolate leaflets to 10 mm long, usually with mucronate apices, upper sides dark green, lower sides gray-green and pubescent; many-flowered terminal or axillary racemes with flowers clustered near end; flowers yellow to 2 cm across, not papilionate, but nearly radial; legumes narrowly elliptical 3.5–10 cm long, winged, rusty pubescent, brown, flat, 1- or rarely 2-seeded, indehiscent.

Uses: 1. Straight branches and trunks of young trees used in building palisade fences of kraals. 2. Cross stick and forked sticks for support of a large calabash butter churn made from stems. 3. The forked sticks used to support cross-piece at main entrance to kraal if *omuhama, Terminalia prunoïdes,* not available. 4. Wood used for tool handles of axes, hoes, etc. 5. Fruit mixed with bark of baobab, *Adansonia digitata,* and a native grass as a magic cure for severe sickness. Loeb et al. (1956) state that witch doctor takes the powder and rubs it on the patient's lips and face to effect the cure. 6. Loeb et al. (1956) state one of the five royal sacred trees. See *omufiata, Colophospermum mopane,* for details. 7. Dried roots powdered and used as a poison in food. A person thus poisoned is said to be "stopped up" and can neither urinate nor defecate (Loeb et al., 1956). 8. Their superstitions include the belief that if a woman inserts an extract of the plant into her vagina that a man having intercourse with her will die (Loeb et al., 1956). 9. Parts of tree ground up, mixed with water and applied to hides of domestic animals as a repellent for flies that lay eggs which become maggots that penetrate animals' skin.

See Hutchinson (1946: 300) for illustration.

Pilostigma thonningii (Schum.) Milne-Redhead
Rodin 9153 (Rundu), *9336*

Bauhinia thonningii Schum.

Common names: Rhodesian bauhinia, picture-frame tree, Rhodesiese bauhinia.

Kwanyama: *omutuutuu, omituutuu* (pl.) or *omutuutu,* the latter used by the Kwanyamas living at Rundu (*Rodin 9153*).

Description: spreading tree to 10 m high, young branches covered with rust-colored pubescence; leaves deeply 2-lobed, cordate at base, almost appearing unijugate, smooth on upper side but distinct reticulate veins stand out on lower side, which is covered with fine pubescence and some glandular hairs also; inflorescence a many-flowered raceme; flowers almost radial, dioecious, white, to 2.5 cm long, male flowers with 10 stamens, 5 long and 5 short, female flowers with one cylindrical pistil becoming a flattened narrow thick legume 12–15 cm long, rusty pubescent, especially when young, not dehiscent, but often breaking into 4–5 1-seeded "joints" which break transversely after falling.

Uses: bark chewed for a cough.

Pterocarpus angolensis DC.
Rodin 2614, 8929

Common names: African teak, South African teak, bloodwood tree, kiaatboom, dolf, dolfholz.

Kwanyama: *omuuva, omyuuva* (pl.) formerly *omuva, omiva* (pl.) and *omiuva* (old pl.). Wrongly called *omuuni* by LeRoux (1971). See *Strychnos cocculoïdes, omuini.*

Description: very large trees sometimes to 30 m high with thick trunks; pinnately compound leaves 20–30 cm long, 6–8 leaf pairs, leaflets 3–8 cm long, ovate to narrow elliptical, finely pubescent underneath; inflorescence composed of irregular flowers in short racemes, flowers golden yellow to orange, calyx campanulate, 5-lobed, one large petal or standard is orbicular, other petals being much smaller; legumes distinct, orbicular and swollen in the middle, to 13.5 cm across, which includes a large surrounding membranous wing, all parts except wing being covered with fleshy prickles when young, drying to form hardened bristles in mature legumes, indehiscent, brown, 1–3 seeds not edible.

Uses: 1. Poles used in building huts, chairs, tables, and other household items. 2. Recently (1973) many large trees have been cut down and taken to the new sawmill at Oshikati, where wood is made into lumber for furniture, including desks for public schools and for teachers, office furniture including tables, cabinets, chairs, etc. for numerous new government offices in Ovamboland, and furniture for the government hospital. These are all cut and made by skilled Ovambos using modern power tools. 3. Frames for Ovambo "piano," the *sanza,* made from wood. Remainder of instrument is made from native-mined iron. Keys are flipped to get music. 4. Red ochre dye is obtained from heartwood of its roots. Roots crushed between harder pieces of wood, or chipped very finely. Red underbark and red heartwood of the stems is also said to be used by some people to obtain dye. Resulting powder is called *olukula, omalukula* (pl.) and is principal dye used as a cosmetic when mixed with various oils and fats, and applied to all exposed portions of body, including hair, face, bare breasts, arms, and legs, in the style of clothing originally used by these people. To make the cosmetic it is mixed with butter, *omaoloolo,* often rancid, or the oil of seeds of following plants expressed in a wooden mortar and pestle or stamping block: *olumono, Ricinus communis; ongona, Sclerocarya schweinfurthiana; oshipeke, Ximenia caffra* and *X. americana;* as well as seeds of several other plants, or from oils and fats of animals, *omaadi.* Red ochre is actually reddish-brown color.

In 1947 men rarely wore red ochre and many were wearing cotton shorts or a few had slacks, obtained when working in mines at Tsumeb or other places. However at that time the women who were never allowed to leave the homeland were still following the older traditions of only wearing a skirt, or aprons of cowhide or tanned cow stomach. All of their bodies and leather clothing was covered with red ochre. By 1973 one rarely if ever saw red ochre worn by men or women. Women wear western dresses of cotton, which they make for themselves, as a result of classes in the schools, or which they order from mail order catalogues, as well as sweaters, shoes, etc. All men's and women's hair is cut short, and women commonly wear beret-like knit or crocheted yarn caps, but no red ochre. Loeb et al. (1956) stated that some red iron oxide was being sold as a cheap substitute for red ochre in 1947–48. 5. Red ochre is used as a dye for coloring palm-fibers (*Hyphaene ventricosa*), for basket weaving, producing a reddish brown dye. Strips of palm leaves are boiled all night in such a so-

lution and resulting dyed fibers are sometimes used in making designs in baskets. See *Berchemia discolor* for other brown palm-fiber dyes.

Heartwood not eaten by termites, but the sapwood is and can be treated with 10% zinc chloride immediately after being cut into lumber to keep out termites. Living trees exude a red gum when injured, or the bark is incised. Red blood-colored gum has long been used by some African tribes (de Winter et al., 1966). Lumber is extensively used in Zambia for furniture (White, 1962) and I have observed it is used extensively for all kinds of carved objects such as birds, drums, model canoes, and even doors by the Okovango people.

Rhynchosia nervosa Benth. var. *petiolata* D. Davy ?
Loeb 72 (Det. PRE, 1948)

Common name: rahkboontjie.

Kwanyama: *imaiembo,* or *iomaiembo* [mother-of-the-embo-plant], *embo = Vigna dinterii.* Formerly spelled *imajembo.* See also *R. totta* and *R. venulosa.*

Description: herbaceous vine, sometimes with woody base, leaves trifoliate, leaflets elliptical, covered with short pubescence, mucronate; racemes in zigzags, few flowered; flowers yellow with some brown markings, not regular as two upper lobes partly united, lowest lobe largest and banner-like, spurred at base, didelphous; legumes compressed, softly villous, lanceolate to oblong-oblique, 1–2 seeded. First report of this species from South West Africa; not in Merxmüller (1966–72).

Uses: an infusion drunk to expel any remaining afterbirth left in womb after birth of a child (Loeb et al., 1956).

Rhynchosia totta (Thunb.) DC.
Rodin 9285

Kwanyama: *imaiembo* [mother-of-embo]; *embo = Vigna dinterii.* Formerly *imajembo.*

Description: herbaceous vine, sometimes woody at base; leaves trifoliate, terminal leaflet 1.3–3 cm long, linear-lanceolate to ovate-lanceolate, petiole 3–13 mm long; flowers yellow, 6–10 mm long, not papilionate but irregular with lower petal enlarged like a standard, often reddish-brown striped, other petals may be somewhat darker yellow; legumes compressed, 30 mm long, about 8–9 mm wide, 2-seeded.

Uses: unknown.

Rhynchosia venulosa (Hiern) K. Schum.
Rodin 9236

R. totta (Thunb.) DC. var. *venulosa* (Hiern) Verd.
R. hirsuta Schinz
Dolicholis venulosus Hiern

Kwanyama: *imaiembo* [mother-of-embo], *embo = Vigna dinteri.* Formerly *imajembo.* See also *R. nervosa* and *R. totta.*

Description: herbaceous vine, sometimes climbing, leaves trifoliate, terminal leaflet ovate-lanceolate to ovate 2–4.2 cm long, rachis 2–12 mm long, flowers yellow 10–15 mm long, not papilonaceous, sometimes reddish-brown striped, other petals often darker yellow color; legumes 20–25 mm long, 6–7 mm wide, containing ca. 2 seeds.

Uses: although called "mother-of-embo," which is eaten, this plant is never eaten or used.

Sesbania microphylla Harms
Loeb 212, 222

Kwanyama: *ombudjembudje* (*Loeb 222*), *eembudjembudje* (pl.) or *okakunde konanga* (Loeb 212).

Description: probably always an annual, attaining 3 m in height, herbaceous, branchlets ribbed; compound leaves to 12 cm long, 5–30 leaflet pairs, linear to oblong, to 0.7 cm long, pale glaucous green and pubescent on underside of leaflets; flowers in racemes ca. 9 cm long, papilionaceous, pure yellow with purple spots on standard; legumes ca. 14 cm long by 2.5 wide.

Uses: seeds stamped and used as a foaming soap (Gabriel Taapopi).

This species is not listed in Watt and Breyer-Brandwijk (1962), but since the seeds of *S. sesban* are listed in that reference as containing saponins, I expect that this species also contains saponins which accounts for foaming action.

Sesbania pachycarpa DC. subsp. *dinterana* Gillet
Rodin 9209

Kwanyama: *ombudje.*

Description: annual herb to 2.7 m high, or sometimes a short-lived perennial, leaves compound 3–17 cm long, 4–35 leaflet pairs, 5–17 mm long, 2–5 mm wide, glabrous; flowers papilionaceous, yellow, outside speckled brown, standard 10–20 mm long, acuminate apex; legumes long and slender, sickle-formed (Merxmüller,

1966–72), but *Rodin 9209* had straight legumes, 6–22 cm long only 0.5 cm wide.

Uses: flowers boiled as potherbs and eaten fresh, or dried in cakes called "cabbages" (*omavanda*) for use during dry season. Oil may be added when cooking.

Sesbania sesban (L.) Merr.
Loeb 497, 499

S. aegyptiaca Pers.

Common name: Egyptian sesban.

Kwanyama: *ombudje jokomulonga* [plant-growing-on-river-bank].

Description: shrub or small tree to 7 m high, brown lenticulate bark; leaves compound to 9 cm long, 10–20 pairs of leaflets, glaucous green beneath; papilionaceous flowers in a few-flowered raceme, flowers 1.2–2 cm across, bright yellow with purple spots or streaks on standard; legumes to 20 cm long, ca. 0.4 cm in diameter, cylindrical with sharp-pointed beak. Not previously reported in Ovamboland by Merxmüller (1966–72).

Uses: unknown.

Watt and Breyer-Brandwijk (1962) state in some areas of Africa used as a fever remedy and for guinea worms. Flower is also eaten as food. In India leaves are used as an insecticide, anthelmintic, and seed used for catarrh and excessive menstrual hemorrhage, etc. Contains a saponin, catechol-tannin, acid resin, a fixed oil, mucilage, and several other oils and fatty acids.

Swartzia madagascariensis Desv.
Loeb 396

Common names: snake bean, white ironwood, witysterhout.

Kwanyama: *omumonga, omimonga* (pl.) [cattle-die].

Description: small to medium-sized tree to 5 m high; pinnately compound leaves with 5–11 alternate leaflets, ovate-elliptical or oval, terminal leaflet often almost twice size of others, 3–7 cm long, lower sides of leaves covered with rusty or gray pubescence; raceme with few flowers, or sometimes 1, flowers with one large suborbicular petal, white with yellow spot at base, ovary on a stalk; legumes cylindrical dark brown to almost black when mature, 7–17 cm long, indehiscent, containing 10–25 very hard, smooth, shiny, flattened seeds.

Uses: 1. When cattle eat leaves they become weak and thin. 2. No medicinal uses in Ovamboland as it is considered poisonous.

According to Watt and Breyer-Brandwijk (1962) bark of stems and roots used for medicinal purposes as a diarrhea and poison remedy, seeds used by Africans in different areas as fish toxicants, snail poisons, insecticides in grain bins, etc. Seed contains no alkaloids or rotenone, but has catechu, tannin, sucrose, a yellow flavone, a saponicide and is high in manganese, saponin and several other compounds.

Tephrosia burchellii B. Davy
Rodin 9085

Kwanyama: unknown.

Description: herbaceous pubescent perennial, woody at base, to 75 cm high; leaves pinnately compound 9–17 leaflets with a terminal leaflet, 1–1.8 cm long, midrib covered with short and long stiff pubescence, cordate to orbicular or narrowly ovate; papilionaceous flowers 5–9 mm long, rose to bloodred on pedicels in leaf axils overtopped by leaf clusters; legumes 2–40 mm long, 4 mm wide, covered with short pubescence.

Uses: grazed upon by cattle and goats.

Tephrosia lupinifolia DC.
Loeb 539

Common names: plat-ertjie, vingerblaarertjie.

Kwanyama: *okanakafukwa* [small-groundnuts]. Also see *Indigofera daleoïdes.*

Description: procumbent perennial 1.2 m high, according to Merxmüller (1966–72), but Mrs. Loeb's field notes (*Loeb 539*) describe it as a vine, roots tuberous; leaves palmately compound, 3–5 leaflets, linear-lanceolate, lanceolate or elliptical, terminal leaflet largest, 1.5–9 cm long, upper surface glabrous, lower surface with heavy appressed pubescence; flowers papilionaceous borne on axillary raceme usually 1–2 flowered, flowers red-lilac to purple; legumes linear, 30–35 mm long, compressed, many-seeded, covered with pubescence.

Uses: small roots chewed to expose fibers, then used as toothbrushes. Loeb et al. (1956) claim used in teeth cleaning for attractiveness when meeting the opposite sex. See also *Diospyros pallens* for other plants with this use.

Watt and Breyer-Brandwijk (1962) state in Barotseland, Zambia, used as a decoction to perform abortions, and used by women to commit suicide.

Tephrosia purpurea (L.) Pers. subsp. *leptostachya* (DC.) Brummitt var. *pubescens* Baker
Rodin 9221 (Det. Merxmüller)

Cracca purpurea L.

Common names: ash vetch, wild indigo; in India: jangli nil.

Kwanyama: unknown.

Description: annual (Merxmüller, 1966–72) or herbaceous perennial, woody at base (*Rodin 9221*), decumbent, or erect to 60 cm high; leaves pinnately compound, 4–13 leaflet pairs, ovate to lanceolate or somewhat linear, always over 1.5 cm long, often much larger, upper surface covered with light pubescence, lower surface with appressed pubescence; papilionaceous flowers 5–9 mm long, *Rodin 9221* fuschia-red; legumes flat and linear, 30–40 mm long, lightly pubescent.

Uses: unknown.

According to Watt and Breyer-Brandwijk (1962) whole plant crushed and used throughout Polynesia, Micronesia, and the East Indies as a fish poison, also in some parts of Africa. In West Guinea and Ceylon used as an antihelmintic. Dalziel (1937) states that in tropical West Africa used as a yellow or orange-brownish dye which is quite permanent. It does not, however, produce any dye which is blue, such as one common name, wild indigo, suggests. Roots have also been used to flavor milk.

Vigna lobatifolia Baker
Rodin 9283

V. dinteri Harmes

Kwanyama: *embibio.*

Description: perennial vine climbing over shrubs and into trees, large, deep, fleshy taproot, swollen in several places along the root, to 5 cm in diameter; trifoliate leaves, terminal leaflet distinctively 3-lobed, 3–7.5 cm long, 1.5–3 cm wide, rachis 7–18 mm long, petiole 15–60 mm long; papilionaceous flowers yellow, about 20 mm long; legumes cylindrical 12–15 cm long, covered with rusty-colored or whitish hairs.

Uses: 1. Seeds or pods not eaten. 2. Fleshy taproots eaten raw.

Vigna unguiculata (L.) Walp.
Rodin 2702 (seeds only), *9301*

Dolichos unguiculatus L.
Vigna sinensis (L.) Endl.

Common names: ovambo beans, blackeye beans, cow pea, kafferboontjie, Kaffir bean.

Kwanyama: *omakunde* (applies to almost all the cultivated species of beans).

Description: annual herbaceous vine, prostrate, or often planted among millet and Kaffir corn (*Sorghum*) where it climbs the stems; trifoliate compound leaves, leaflets on short stalks with small stipules, terminal leaflet ovate entire or with small lobes, 3–8 cm long, lateral leaflets cuneate at base, or hastate and lobed or entire, petiole 10–100 cm long, petioles and leaflets covered with short, stiff pubescence; flowers papilionaceous, 10–20 cm long, yellow, on axillary stalks 3–20 cm long, several flowers to a raceme; legumes slender, cylindrical, 10–15 cm long, beans kidney-shaped, white with black area around the hilum, legumes dehiscent. See Dalziel (1937) for seed variations as found in tropical West Africa for this species. Merxmüller (1966–72) says in South West Africa the legumes and roasted taproots edible.

Uses: 1. Green legumes boiled and eaten as a vegetable. 2. Extra dried beans are kept for dry season when they are soaked in water for one day and boiled. Salt is added before being eaten. 3. Soup is made from the soaked dried seeds in which marula nuts, *Sclerocarya caffra,* are added. 4. Leaves cooked and eaten as a potherb. Extra leaves boiled and after water is drained off are made into flat dried cakes referred to as dried "cabbages" (*omavanda*) for use in dry season. 5. Leaves boiled with leaves of *Gynandropsis gynandria* to have a special potherb mixture called *ombidi,* eaten after salt is added.

There was no mention by my informants of use of roasted roots as food, as mentioned by some tribes in South West Africa by Merxmüller (1966–72).

This is the most important crop cultivated after the millet and Kaffir corn, and forms an important part of their diet. Widely distributed and form grown in China and India (*V. sinensis*) was at one time thought to be a different species; now all commonly combined according to the rules of priority by the name of the African species. I believe this species was first brought to America with slaves who took seeds with them when Portuguese forced Ovambos from Angola into slave trade in American colonies. It is still one of the dominant vegetables in southern United States.

Voandzeia subterranea Thouars
Rodin 2694 (seeds only), *9359*

Common names: bambarra, groundnuts, earth pea, ground pea, kaffergrondboontjie.

Kwanyama: *ofukwa, eefukwa* (pl.), usually only plural form used.

Description: herbaceous annual that starts growing erect, but lateral branches become creeping stems which root at nodes, leaves pinnately trifoliate, each leaflet being on a short stalk; papilionaceous flowers, after pollination ovary matures underground as with peanuts; legumes 1–2-seeded indehiscent, tan seeds very hard and round. Ovary of peanut is pushed down under soft soil to mature, but this species differs because the ovary is turned up after pollination, and pedicel which is curled back pushes down into soil and draws the ovary underground.

Uses: 1. Preference is to boil and eat green seeds. 2. Seeds often cooked and eaten with green *omakunde* (*Vigna unguiculata*) pods when they are young. 3. Seeds sometimes roasted, but are so hard that peanuts which are softer are preferred. These cannot be eaten raw when dry because of the hardness of seed. 4. Some seeds harvested when dry, shelled, and saved for food in dry season, when they must be soaked one day before cooking. 5. Dry seeds sometimes added to dried, soaked, boiled *omakunde* seeds and sometimes marula nuts (*Sclerocarya caffra*) mixed with them for food.

Cultivated and does very well in sandy soil; native to that part of Africa and also up into tropical West Africa, where several variations in the seed shape and color appear (Dalziel, 1937).

LILIACEAE

Albuca fleckii Schinz
Rodin 9022

A. sordida Baker
A. praecox Engl. & Krause

Kwanyama: *omanjanga,* a general name for bulbous plants.

Description: basal rosette of 4–6 linear leaves, glabrous 50 or more cm long, 10–20 mm wide arising from a bulb 4–5 cm in diameter with tan fibrous bulb coat; flowers form raceme 30–100 cm high, corolla regular, 6 petals 14–16 mm long, petals yellow with a green streak down the midrib (Merxmüller, 1966–72, says green with white stripes), 6 yellow anthers; fruit a 3-valved dehiscent capsule, 3-angled with 3 carpels, each containing many flat black seeds.

Uses: not used.

Aloë esculenta Leach
Rodin 9013 (living only), *9509*; *Loeb 2, 193* (Det. W. Zimmerman)

Common name: aloe, aalwyn.

Kwanyama: *endobo, omandobo* (pl.).

Description: perennial succulent plant with short unbranched stem and rosette of broad succulent leaves. Distinctive vegetative feature which distinguishes this from other common species (*A. zebrina*), is presence of spines not only along the leaf margins, but along the top and bottom of midrib. Leaves 30 or more cm long, to 5 cm wide, very thick and fleshy, flower stalks often 60–90 cm high with a few branches in a candelabra-like inflorescence, flowers on short pedicels, tubular, opening only at the outer lobes slightly, yellow-orange, capsules somewhat triangular, with three locules each bearing many seeds. First report of this species in South West Africa, although common in Angola.

Uses: 1. Juice of leaf is put on cuts and burns. 2. Root stamped in mortar and pestle, made into a paste using water, and massaged on aching parts of the body, especially to reduce swelling. 3. Extract of leaves is rubbed on the nipple of a mother's breast in order to wean nursing children. Sap is so bitter children soon are weaned. Loeb et al. (1956) confirmed this usage. 4. Dried leaves representing quills of porcupine worn strung around neck and under arms. These are supposed to have magic protective qualities during *efundula* ceremony (puberty rites) for girls (Loeb et al., 1956). This rite is now dying out. 5. *Endobo* is one of four sacred plants whose branches are walked over in the ceremonies before a new kraal is occupied (Loeb, 1955a–c). See *Colophospermum mopane* for details. 6. Flowers eaten boiled, much like potherbs, sometimes with millet porridge. 7. Extra boiled flowers made into small flattened cakes and dried in sun, or occasionally over a very slow fire, to be kept for dry season, called "cabbages" (*omavanda*) by my informants.

Aloë zebrina Baker
Rodin 2657, 9013, 9361 (living only), *9231*; *Loeb 465*

A. playtphylla Baker
A. baumii Engl. & Gilg

Common names: aloe, botaalwee, aalwyn.

Kwanyama: *ekundu, omakundu* (pl.) [red], referring to reddish-orange colored flowers.

Description: perennial succulent plant with very short unbranched stem and rosette of narrower succulent leaves; the leaves having spines only along the leaf margins, to 30 cm long with whitish or yellow streaks, spines or teeth on leaf margins brown, 4–6 mm long, 10–20 mm apart; inflorescence to 1.3 m high, with some branching; flowers tubular, reddish-orange, 30–35 mm long, swollen at base, anthers exserted 1–2 mm; fruit a dehiscent capsule with 3 locules each bearing many seeds. According to Loeb et al. (1956) *A. zebrina* and *A. greatheadii* were growing in this area, but one of his species was misidentified. Merxmüller (1966–72) did not report this species as being in Ovamboland; this is the first report of it.

Uses: 1. Reddish-orange flowers are cooked and eaten. 2. Flowers are cooked, dried and kept for food for dry season. My informant stated often then eaten with millet porridge and he said, "Add butter to make them very nice. When eaten with porridge, the dried flowers are dipped into porridge and then eaten." They probably dunked *Aloë* flowers before dunking doughnuts was every invented! 3. Leaves are very bitter and never eaten.

Merxmüller (1966–72) says *Aloë obscura* Miller was reported collected at Oshandi in Kwanyama area in 1896 by Dinter, most probably not correctly identified and cannot be found in Ovamboland.

Asparagus africanus Lam.
Rodin 9242

A. burkei Baker
A. pilosus Baker
A. fleckii Schinz

Common names: wild asparagus, haakdoring, katdoring, wag-'n-bietzie.

Kwanyama: *okalila konghadi* [the-female-okalila]; also a general name: *okalili, oulili* (pl.) [little-bed].

Description: erect shrub or vine-like perennial, stems green-gray to bright green, glabrous or pubescent, young branches often whitish, normally herbaceous with woody base bark not peeling off; leaves needle-like 3–10 mm long, referred to as phylloclads by some authors, in clusters of 8–20, where there is one spine, sometimes interpreted as a modified leaf; flowers mostly axillary, but may be terminal, in clusters, pedicels 5–8 mm long, petals small, white, 6 perianth segments free, one stamen attached near base of each segment, fruit small spherical berries containing 1 to a few seeds. Plants have rhizomes and a fleshy diffuse root system.

Uses: leaves and twigs stamped, made into a tea and drunk for an upset stomach.

Asparagus virgatus Baker
Rodin 9086

Common names: katbosdoring (bossie), makkatdoring.

Kwanyama: *omilu.*

Description: a perennial with young green branches, brownish bark near the base and on older stems rhizomes present; phylloclads filiform, no spines are present in the species; flowers small, white; small spherical berries. Merxmüller (1966–72) states that one collection by de Winter appeared to be a variation of this species, but it had stronger woody stems and strong leaf-spines, not typical, so this is first verified record of the species in South West Africa.

Uses: 1. A tea brewed from stems and foliage stamped first, and drunk by women unable to get pregnant to promote fertility. 2. Grazed upon by cattle and sheep.

According to Watt and Breyer-Brandwijk (1962) Zulus make a decoction of roots as an anthelmintic for man and beast, with addition of roots of *Fagaria capensis* and *Indigofera* sp. One tribe also uses it as a post partum treatment.

Asparagus sp.

Loeb et al. (1956) cited *A. buchananii, A. plumosus, A. capensis,* and *A.* sp. as being among the species observed in Ovamboland, but they have no recorded vouchers, and the records are in doubt, except *A. africanus,* which they also note, and which I have collected. They state that an infusion of *Asparagus* is taken orally and anally for venereal diseases of men. Which species and what parts of plant are used is not mentioned.

Dipcadi bakeranum Bolus
Rodin 8923, 9067

D. brevipes Baker
D. gonocarpum Suess.

Common name: dronkui.

Kwanyama: *yianga* or *okanyianga* (for the smaller bulbs), a general name for most bulbs.

Description: basal rosette of leaves arise from an underground bulb 15–25 cm deep, 2.5–3 cm long and 1.3–2 cm wide with a thin fiber cover; leaves linear to somewhat lanceolate 15–30 cm long, 10–25 mm wide, glabrous; flower stalk ca. 45 cm high bearing greenish-yellow perianth with 3 inner and 3 outer segments, the 3 outer reflexed, 17–20 mm long; fruit a dehiscent capsule with 3 locules bearing black seeds.

Uses: not used, the bulb considered poisonous.

Eriospermum bakeranum Schinz
Rodin 9206

E. bechuanicum Baker
E. lanceaefolium auct.

Kwanyama: *okanyianga,* common name for plants with bulbs [*okan* = small].

Description: usually 1 or sometimes several leaves arise from one large corm, dark brownish-red in cross section; leaves narrowly lanceolate or narrowly ovate 3–12 cm long, 1–2.5 cm wide, plant glabrous; flowers white with brown midvein, 6–8 mm long; fruit a 3-valved capsule contains a few seeds in each of 3 locules, seeds covered with woolly hairs. Most species considered toxic or poisonous (Watt & Breyer-Brandwijk, 1962).

Uses: not used.

Gloriosa simplex L.
Rodin 9375

G. virescens Lindley (used in Merxmüller, 1966–72)

Common name: climbing lily, superb lily, geelboslelie, roiboslelie.

Kwanyama: *ompilu.*

Description: arising from a swollen rhizome, perennial vine, branches to 1.2 m long, sometimes climbing on shrubs; leaves lanceolate, on long petioles, apex attenuated into a tendril; flowers showy, 7–10 cm in diameter, red with yellow toward base of 6 perianth segments; fruit a dehiscent capsule, leathery, seeds dark red.

Uses: not used.

Watt and Breyer-Brandwijk (1962) devote several pages to chemical nature of two species of *Gloriosa* from southern Africa, both of which appear to contain same or very similar compounds. Both species are extremely poisonous, and death from eating one rhizome has caused humans to die in four hours. Leaves and stems are also highly toxic, containing colchicine and several related compounds. Livestock and pigs are also affected by its toxicity.

Sanseveria

The genus has been retained in the Liliaceae by Phillips (1951), Watt and Breyer-Brandwijk (1962), and other authors. However, Merxmüller's key to the families (1966–72) has placed it in the Agavaceae. He separates Agavaceae as having "white flowers under 10 mm long" with the Liliaceae as having "bloodred, yellow or greenish (flowers) less than 20 mm long." I do not consider this enough distinction to separate the two families, so have retained the genus in Liliaceae.

Sanseveria aethiopica Thunb.
Rodin 9124, 9307

Common names: bowstring hemp, kafferwortel, wildewortel.

Kwanyama: *omuse.*

Description: succulent plants with fibrous half-cylindrical leaves, awl-like apex, margins somewhat revolute with a rough reddish margin, to 67 cm high arising from a stout creeping fibrous rhizome; inflorescence a panicle, 6 white perianth segments form a cylindric tube; fruit a berry with 1–3 seeds. Sometimes cultivated.

Uses: fibers from leaves obtained by beating the leaf with a stick against a log. Fibers used for bowstrings and in making of threads and rope.

Sanseveria pearsonii N.E. Br.
Rodin 2624, 9259

Kwanyama: *ongushe, enghushe* (pl.).

Description: a few leaves arise from stout branched rhizome, leaves to 3 cm in diameter, tough and fibrous, succulent, cylindrical with one groove on inner side of leaf, sharp-pointed; small white flowers in panicles, 6 perianth segments, flower stalk 50–60 cm high; fruit a spherical berry, 1–3 large seeds.

Uses: 1. Leaf fibers used for threads in finishing tops of baskets, hats, etc. Leaves pounded between two pieces of wood to remove fibers. Threads made by twisting fibers. 2. Some fibers made into heavier cord or rope by braiding or plaiting. Such cords used for harpoons, bow strings, etc. 3. Leaves pounded until they become

a fibrous mass, but not pounded very much at the end, so they do not separate. Such bundles of fibers are then dried and made into skirts for the girl's puberty rites (*efundula*). Fibers prepared in this manner are called *omundjalo uenghuse*. In 1973 there was such a decline in puberty rites that many special symbolic aspects of the costumes, such as the skirts, special hair-braiding with a wooden frame under it, etc. are no longer being consistently practiced. 4. Fibers of this plant, according to Loeb et al. (1956), have special symbolism as protective plant armor.

Scilla rautanenii Schinz
Rodin 2704?, 9166

S. ondongensis Schinz
S. kestilana Schinz
Drimiopsis engleri Krause
D. papillosa Dinter

Kwanyama: *enyanga*, a general name for plants with bulbs.

Mbalantu: *omanyanga* (a bulbous plant).

Description: liliaceous plant arising from bulb 2 cm in diameter; leaves in basal rosette, *Rodin 9166* were wide, but rarely almost linear, usually lanceolate to ovate, distinctly purple mottled leaves 10–20 cm long, 5–10 mm wide; flowers with six greenish perianth segments, 3.5–5 mm long with some pink on them, according to Merxmüller (1966–72), also sometimes with violet, showy purple filaments on stamens, anthers yellow; pedicels pink; capsules with 3 locules, each with numerous black seeds.

Uses: cattle and goats eat leaves.

Trachyandra arvensis (Schinz) Oberm.
Rodin 9030

Anthericum arvense Schinz
A. flavoviride Baker
A. gilvum Krause

Kwanyama: *enyanga*, a general name for plants with bulbs; formerly *enjanga*.

Description: perennial plants, rhizome and fleshy diffuse roots; linear leaves form a basal rosette ca. 60 cm long, to 3 mm wide, glabrous; inflorescence a much-branched panicle; flowers yellow, 6 free perianth segments, ovary globose; fruit a coriaceous loculicidal 3-valved capsule, seeds 3-angled, black.

Uses: 1. Poisonous to humans, including roots, leaves and flower stalks. 2. Leaves eaten by goats.

LOGIANACEAE

Strychnos cocculoïdes Baker
Rodin 8995

Common names: Kaffir orange, geelklapper(boom), gifklapper(boom).

Kwanyama: *omuini, omyuuni* (pl.) for tree, *euni, omauni* (pl.) for fruit. Older forms: *omunya, ominya* (pl.) for tree.

Description: tree to 8 m high, hooked thorns 1–1.5 cm long in axils of some leaves, older branches with longitudinal corky ridges, a very distinctive feature of this species; leaves with 5 primary palmate veins, dark green on top, dull green on lower side, ovate-elliptical to orbicular to 6 cm long, fruit spherical, to 9 cm in diameter, immature fruit mottled green with yellow spots, ripe fruit orange, outer shell hard, ca. 5 mm thick, pulp inside soft, fleshy, many-seeded, pulp sweet with slightly acid flavor, edible.

Uses: 1. Pulp, but not seeds, eaten raw and has a pleasant taste. 2. Pulp fermented for wine, or distilled to make brandy (*olambika*). 3. Hard outer shell of fruit used as a cup for storage of small items in kraal, and in the past, especially, used to hold vegetable fats or butter mixed with red ochre as a cosmetic. This custom now dying out.

Watt and Breyer-Brandwijk (1962) said there are reports as yet unconfirmed that some strychnine is contained within seeds. One tribe chews root to cure eczema and reports wood suitable for tool handles.

Strychnos pungens Solereder
Rodin 2663, 8996

Common names: wild orange tree, Kaffir orange, bloukapper(boom), grootklapper(boom).

Kwanyama: *omupwaka, omiwapaka* (pl.) for tree; *epwuka, omapwaka* (pl.) for fruit. Former name of tree; *omupuaka*, former name of fruit; *epueka*.

Description: medium sized tree to 8 m high; leaves on short pedicels, opposite, elliptical-lanceolate to broadly elliptical, sharp-pointed apex ca. 3 mm long, upper surface shining, both surfaces light green, three longitudinal veins, 2 being submarginal, leaves to 8 cm long by 3.5 cm wide; fruit spherical to 12 cm in diameter, blue-green when unripe, turning orange when ripe.

Uses: 1. Seeds and pulp eaten raw, never cooked or preserved. 2. Rind of fruit powdered and included with other herbs in new bride's pouch for

perfumed burnt incense; kept in her gift token basket and she anoints forehead of all who present her with a token gift (Loeb et al., 1956). 3. Root pulverized, mixed with water and drunk for bone diseases of extremities (Loeb et al., 1956). 4. Dry hard shell of fruit used for holding various objects, especially fats and vegetable oils used for cosmetics, particularly when mixed with red ochre, was very common in 1947, but in 1973 almost discontinued. My informant said it was a "pagan custom."

Watt and Breyer-Brandwijk (1962) state fruit contains citric acid and pulp is edible. Although seeds are bitter, they contain no alkaloid and are not toxic unless taken in large quantities which causes diarrhea. In Zambia a decoction of roots is used to cure stomachaches and bronchitis (White, 1962).

Rodin 2664 was identified in 1948 as *Strychnos spinosa* Lam. Although I have not recently seen the specimen, I suspect it is really *S. coculoïdes,* because it has same Kwanyama names and uses, and *S. spinosa* does not reach this far north in South West Africa.

Loranthaceae

This family consists of complete or hemiparasites, the latter types carrying on some degree of photosynthesis and contain some chlorophyll. Some species restricted to one or a very limited number of host species, others found on a wide range of hosts.

Tapinanthus oleaefolius (Wendl.) Danser
Rodin 2628, 8910

Lichtensteinia oleaefolia Wendl.
Loranthus oleaefolia (Wendl.) G. Don
L. meyeri C. Presl
L. namaquensis Harvey

Common names: mistletoe, bird-lime (Ovamboland), lighted candles, lighted matches, voelent.

Kwanyama: *oshilunda, oilunda* (pl.) [a-kind-of-leprosy], inferring it causes "leprosy" upon the marula tree, *Sclerocarya caffra,* which is its host in Ovamboland; *oulamba* given by my informants; *oshilagula, oulemba* given by LeRoux (1971), but it is not clear if both these names he uses apply to the fruit. He referred to *Loranthus* spp. among the Kwanyamas, and this is the only species found there.

Description: much-branched herbaceous hemiparasite to 0.6 m in size found on many different host tree species; leaves ovate, greenish, mostly with a short petiole; flowers tubular with 5 lobes, red with some green or yellowish color at outer part of corolla lobes which are reflexed, flowers covered with velvety hairs; berries ovate, red-orange when mature and contain a sticky viscous substance inside.

Uses: 1. Sticky substance in fruits (*oulamba*) is smeared on a stick where birds will stand to drink water. Birds stick to substance and can be caught, thus common English name in that area, "bird-lime." 2. Tender branches sometimes broken off and given to goats for food. 3. Plant made into an infusion and three spoonsful a day are taken for lumbago (Loeb et al., 1956).

Malvaceae

Abutilon angulatum (Guill. & Perr.) Mast.
Rodin 9213; Loeb 493

Bastardia angulata Guill. & Perr.
Abutilon intermedium Hochst.

Kwanyama: *ehati, omahati* (pl.) [big-stalk].

Description: a suffrutescent perennial, some branching at base but little above, stems conspicuously angled, covered with white pubescence; leaves cordate or sometimes broadly ovate with 5–7 veins running length of leaf, to 22 cm long, shallow curved teeth to almost entire; inflorescence a loose panicle, nearly leafless, flowers yellow to apricot with dark purple center, ca. 6 cm in diameter, one distinctive feature of family is a tube formed by fusion of bases of stamen filaments, calyx cup-shaped with 5 ovate lobes; fruit a circle of about 20 1-seeded dry mericarps which separate and fall off at maturity.

Uses: juice extracted from roots and drunk as cure for inflammation of lungs.

Cienfugosia digitata Cav.
Rodin 9187 (Ruacana area)

Rugosia digitata (Cav.) Pers.
Hibiscus cavanillesii O. Kuntze

Kwanyama: unknown.

Description: shrub with upper part herbaceous, 30 cm high, sparingly pubescent, branchlets angular; leaves palmately 3–5 lobed, orbicular, 2–5 cm across on a petiole about 2.5 cm long; flowers single in leaf axils, plaited, yellow with some pink and deep red inside at base of petals, calyx about 15 mm long, lobes narrow, 3-point-

ed, each vein has a double row of black oil-producing glandular hairs, involucre cup-shaped, 2–3 mm long; ovary 3–5 carpels, fruit a loculicidal dehiscent capsule.

Uses: unknown.

In tropical West Africa root is a remedy for snakebites (Dalziel, 1937).

Gossypium herbaceum var. *africanum* Hutch. & Goess

Rodin 2696 (Det. Hutchinson), *8966*; *Loeb 7, 433*

G. herbaceum L.
G. obtusifolium var. *africanum* Watt.

Common names: wild cotton, tree cotton, wildekatoen, katoenbossie.

Kwanyama: *osinduduandiba*, formerly *oshiduduandiba*. Commercial cotton wool or cotton fibers can be purchased and is called *omundele* [feels-like-fur-of-a-hare], and although used in hospitals, is not otherwise widely used. Wild cotton fibers are only ones used in kraals. Cultivated commercial species (*Gossypium herbaceum* L.) is not grown in Ovamboland.

Description: perennial bush 2–3 m high, pubescent, observed climbing up through *Acacia* bushes and young trees, later becoming almost glabrous, covered with black glandular dots; leaves palmately incised or lobed, somewhat orbicular in outline, 3.5–6 cm across, petiole 1–2.5 cm long, leaves pubescent; flowers yellow with red about 8 mm at base inside (Merxmüller, 1966–72, states the base of petals inside is purple), petals ca. 3 cm long; capsule with 3 locules, ovate 2 cm long by 1.5 cm wide, glabrous, loculicidal dehiscence. Cotton fibers adhere closely to seeds and fibers quite short, but abundant.

Uses: 1. Pads of cotton fibers used for cleaning pads. 2. Cotton fibers put into quivers to separate arrows so feathers will not be broken. 3. Medicines put on cotton fibers at present to put into ears for earache. 4. Not usually used in pillows here, as in some parts of Africa; chicken feathers are used instead. 5. Perhaps because fibers are such short staple form, they have never been spun into thread or used in weaving any kind of cloth; clothing was made from animal hides and cow stomachs.

Hibiscus caesius Gürke

Loeb 110, 125

Kwanyama: *olukoko, omalukoko* (pl.) [*eko-ko* = crust] for *Loeb 110*: *oluwawa, omaluwawa* (pl.) [*olu-wawa* = big-crowd-of-youngsters, also short folks].

Description: shrub to 2 m high; leaves 3–5 palmately lobed, usually 5 lobes at base, 2–10 cm long, sparsely covered with stellate pubescence on lower side, petioles to 8 cm long, linear stipules 10–12 mm long. Flowers to 10 cm in diameter, yellow or cream with dark red or deep brownish color at base of petals inside flower, peduncle to 12 cm long; involucral bracts 7–9, to 3.5 cm long, linear, stiff and pungent. A distinctive feature is the involucre. Capsules ovoid, 12–15 mm long, somewhat pointed, covered with fine hairs, also seeds covered with fine appressed hairs.

Uses: unknown.

Hibiscus sp.

Loeb 231

Kwanyama: *efila* [soft-herb-for-tanning]. See also *Pavonia, Sida.*

Uses: the Ovambo name *efila* infers that this herbaceous plant might be used for tanning, but my informants did not know of this use among Kwanyamas.

Pavonia hirsuta Guill. & Perr.

Rodin 2678; *Loeb 81, 167, 231, 474*

Kwanyama: *efila, omafila* (pl.) [soft-herb-used-in-tanning]. Also see *Hibiscus* sp. and *Sida.*

Description: herbaceous shrubby plant forming a dense mat and climbing on a fence around a kraal. Leaves extremely variable from cordate to 5–7–9 palmately lobed; flowers to 8 cm in diameter, sulfur or pale yellow with deep red to maroon center, involucre 12–16 linear bracts, not spreading at maturity; fruit 5 mericarps which separate at maturity.

Uses: see for *Hibiscus* sp.

Sida alba L.

Loeb 201

S. spinosa auct. non L.

Kwanyama: unknown.

Description: plant ca. 1 m high, covered with pubescence; leaves ovate to cordate, 2–5 cm long, serrate petioles to 3 cm long, distinctive hooked spines usually present; flowers white or yellow, solitary or fascicled in leaf axils, petals 5–6 mm long, calyx cup-shaped, 5-lobed; fruit 5 rounded mericarps with 2 setaceous awns.

Uses: unknown.

Sida cordifolia L.
Loeb 167a

Common names: koekbessie (fruit), koekbessiebossie (plant).

Kwanyama: *efila* [soft-herb-used-in-tanning]. See also *Hibiscus* sp. and *Pavonia*.

Description: erect branching perennial to 1.3 m high with soft pubescence, leaves 4–10 cm long, petiole 3–6 cm long, blade broadly ovate to subcordate, margin irregularly crenate, equally pubescent on both surfaces; small yellow flowers in clusters, rarely single, in leaf axis, petals 7 mm long, calyx 5-cleft, mericarps ca. 10, 3-sided with prolonged awns distinctive.

Uses: although Kwanyama name infers used for tanning leather, there is no report of it being used for this purpose at this time in history.

Stems are used for fibers and considered a potential fiber plant in Zimbabwe (Excell & Wild, 1960–63). Species widespread in African tropics and Dalziel (1937) reported leaves fed to horses, stems used as brooms and fibers as girths on horses.

Sida hoepfneri Gürke
Rodin 9005, 9293

Kwanyama: *okanangola*, inferring: [small-plant-from-Angola]; *okahamupunda*, the name used in eastern Kwanyama area.

Description: perennial, woody stems at base, ca. 50 cm high; flowers single in leaf axils, flowers white or light yellow according to Merxmüller (1966–72), but both *Rodin 9005* and *9293* had orange corollas, with notes for *9005* that anthers were bright orange, corolla ca. 2 cm in diameter; fruit ca. 10 mericarps with pointed projections but not ciliated.

Uses: 1. Foliage eaten by cattle and goats. 2. Tea made from leaves and stems is drunk by a mother after the birth of a child to remove afterbirth.

Watt and Breyer-Brandwijk (1962) reports used in India as a remedy for diarrhea and contains some ephedrine.

MELASTOMACEAE

Dissotis debilis (Sond.) Triana
Loeb 16, 216, 285?

Osbeckia debilis Sond.

Kwanyama: *okanautoni, ounautoni* (pl.) [little-of-hyena-call] refers to the hyena sickness or results of previous enemies killed, for *Loeb 285*; *ongonya-ixupi* [a-short-feast], for *Loeb 16, 216*; *ongonyo-ile* [a-long-feast] for a species of *Dissotis* not collected, but recorded by Loeb.

Description: herbaceous shrub to 45 cm high; leaves subsessile, linear-lanceolate to ovate, 4–6 cm long, 3 primary veins, sometimes 5; flowers in small dense heads surrounded by persistent bracts, dioecious, flowers rose to purple, 4 sepals, 4 petals, calyx tube with lanceolate lobes 3 mm long, alternating with bristle-tipped appendages; fruit a subglobose capsule with 4 carpels, many-seeded.

Uses: 1. The plant identified as *okanautoni* is used to protect a warrior who killed enemies and prevent any ghosts or spirits of enemies from haunting him. This species mixed and chewed with *eyakanhoni* (formerly *ejakanoni*), a plant not collected; scientific name unknown, then swallowed. Loeb et al. (1956) do not say what parts of plant used, but on *Dissotis* Mrs. Loeb labelled plant as having a "long hairy sweet tuberous rootstock," so perhaps root used. 2. For *ongonyo-ixupi*, Loeb et al. (1956) reported parts of plant mixed with warm water and cooled. Women with gonorrhea take one spoonful three times a day orally and remainder administered anally. 3. For *ongonyo-ile* (formerly *ongonjo-ile*), Loeb et al. (1956) stated powdered root is mixed with water and drunk as a protection against rabies. It is supposed to provide protection against a dog bite for one month.

Another plant called *ongonyo* is the genus *Geigeria*. Loeb was not certain if both species used for this treatment. Several species of *Geigeria* listed by Watt and Breyer-Brandwijk (1962) are extremely poisonous and killed much livestock in southern Africa. I doubt if *Geigeria* would be taken internally without severe or fatal toxic reactions.

Loeb 285 was probably misidentified as *D. phaeotricha* (Hochst.) Triana in 1947. There is only one species in all of South West Africa now recorded.

MELIACEAE

Entandrophragma spicatum (C. DC.) Sprague
Rodin 2631, 8914

Common name: mahogany (there are many in tropical Africa from several families and genera).

Kwanyama: *omataku, omitaku* (pl.) tree; *etaku, omataku* (pl.) fruit.

Description: tree sometimes 30 or more m high; leaves pinnately compound, 3–7 subopposite or opposite pairs of leaflets, each 3–8 cm long, 2–5 cm wide, densely pubescent on sides of midrib and smaller veins; inflorescence an axillary panicle ca. 20 cm long; flowers have 5 sepals and petals somewhat cup-shaped, filaments 10, fused into a cup with anthers on the rim of cup; fruit large wooden capsule cigar- or spindle-shaped, smooth dehiscing by 5 valves which separate from a large 5-angled woody columella, ca. 5 seeds per carpel, each with a single wing ca. 5 cm long, capsule according to Merxmüller (1966–72) 10–12 cm long, but all mine 19–20 cm long with seed wings ca. 4 cm long.

Uses: 1. Seeds considered poisonous and never eaten. 2. Seeds stamped to obtain their oil for cosmetics only, usually mixed with red ochre. Loeb et al. (1956) mistakenly called this plant *Bombax*. 3. Small stems cut, the ends frayed so that fibrous ends can be used as toothbrushes. See *Diospyros lycioïdes* also. 4. Axis of pods is burned and ashes mixed with tobacco to make snuff.

Rodin 2631 identified in 1948 by PRE as *E. angolense* (Welw.) C. DC., but I have not been able to locate it in the literature available to me, and from the description in my notes it appears to be the one species now known from Ovamboland, *E. spicatum*.

Nymania capensis (Thunb.) Lindb.
Rodin 2665, 9060

Aitonia capensis L.

Common name: chinese lanterns (fruit), chinese lantern tree, kipkippers, klapperbos (Namaqualand), malmeidbos, oumeidebos.

Kwanyama: *omunghudi, ominghudi* (pl.) are preferred forms, also *omunghidi* and formerly *omuńidi*.

Description: a medium sized tree, less than 10 m high, sometimes shrub-like with smooth bark, stems often gnarled appearance, leaves usually fascicled, entire, linear-oblong, 10–20 mm long; flowers solitary, axillary on pedicels, flowers red with 4 petals, 4 sepals, 8 stamens connate at base, a showy persistent fruit consists of a 4-lobed capsule, almost like wings, inflated, papery, membranous ca. 5 cm long, each lobe or carpel 1–2-seeded. Persistent reddish pods make it a very attractive shrub or tree. Most records from southern desert regions describe it as a shrub, but in Ovamboland close to St. Mary's Mission near Angola border I found one tree 10 m high and 1 m in diameter, probably due to the high rainfall in area.

Uses: 1. Root crushed and put into gourds with milk to sour and thicken it rapidly, like yogurt in America. I suspect that roots produce an enzyme similar to rennin to cause curdling. Watt and Breyer-Brandwijk (1962) give very little data about the species, mentioning that it is only used by Europeans and Hottentots for convulsions. Curdled milk is often taken into fields for a midday meal, and more easily carried on longer trips for sustenance and refreshment than fresh milk. On one occasion I met two women who had walked approximately 15 miles (in 1947) to cut and carry back on their heads bundles of thatching grass. I discovered all they had taken for nourishment on trip was one gourd each of sour milk. 2. Leaves stamped and smelled to cure a headache.

In the literature there is mention of *Boscia albitrunca* (Burgh) Gilg & A. Ben. as having the same uses as this species. Both plants shrubby in desert with very similar leaves, gnarled trunks and similar growth habits. I have not been able to locate *Boscia*, which also has Kwanyama name, *omunghudi*, and is also reported to be used for curdling milk (LeRoux, 1971: 70). This should be checked further.

See Hutchinson (1946: 63) for an illustration.

MENISPERMACEAE

Tinospora fragosa (Verd.) Verd. & Troupin
Rodin 9257; Loeb 202

Desmonema fragosum Verd.

Kwanyama: *eposa, omaposa* (pl.), also *omaposha* (pl.) [saddle's stirrup].

Description: woody climbing vine with rather succulent texture, plant entirely glabrous; leaves orbicular-cordate to ovate-cordate 3–8 cm long on petiole 3–8 cm long; flowers 2–5 cm long, borne on lateral branches with subtending leaves 1–3 mm long, flowers unisexual: male flowers with 6 perianth segments, 3 inner and 3 outer, broadly ovate, ca. 1.5 mm to 3.5 mm long, 6 stamens, female flowers similar in morphology except for presence of stalked ovary with 3 locules, stamens reduced to staminodia ca. 2 mm

long; fruit somewhat ellipsoidal 8–10 mm long. Easily propagated by stem cuttings.

Uses: 1. When cattle become infected with anthrax, healthy cattle are fed *eposa* medicine to make them immune to an anthrax (*ombulua*) epidemic. 2. Stems of this plant shredded, mixed with water and applied to cure boils resulting from anthrax. 3. Plants grown in kraals for good luck (Canon Gabriel Nameuja). 4. If plants are grown in a kraal, snakes will not go near that kraal.

Loeb's specimen originally identified as *T. caffra* (Miers) Troupin but there is a revision of the genus with this new species segregated by Verdoorn and Troupin.

MOLLUGINACEAE

Gisekia and *Limeum* have been placed in the Phytolaccaceae by Phillips (1951) and others, and some authors have placed part of this family at one time in the Aízoaceae.

Gisekia pharnaceoïdes L.

Rodin 8930, 8982, 9036; *Loeb 8, 171, 213, 236*

G. linearifolia Schumach. & Thonn.
G. congesta Moq.

Kwanyama: *omundjulu, omindjulu* (pl.). See also *Sesuvium*. Local residents at Engela area called it *engamundjulu* where they also stated it was used only for pig food, not for human consumption, and they said it was sometimes improperly called *omundhamundjulu*. Loeb's specimens all appear to be same species, but had variance in Kwanyama names: *Loeb 8* identified in 1948 as *G. miltus* Fenzl., and vernacular as *enganndjulu* without record of uses; *Loeb 171* as *omudjenene*; *Loeb 213* as *omubulukutu*, and *Loeb 236* as *ohangandjulu* or *omudjenene*. This is first record from Ovamboland as it is not recorded there in Merxmüller (1966–72).

Description: much-branched herbaceous annual from nearly prostrate to somewhat decumbent; leaves linear-lanceolate on petiole 2–5 cm long, leaves somewhat succulent; flowers small, pink with membranous margins, Merxmüller (1966–72) says they are often red-violet, a distinctive feature in recognizing this species, also subtended by membranous bracts, 5 or 6–8 petals, 5–15 stamens; fruit 5 carpels separating at maturity as spiny nutlets.

Uses: 1. Eaten by pigs, and considered an important food for them. 2. Leaves boiled, then mixed with other plants (*ombidi,* meaning low herbs), then cooked together and eaten together as potherbs. 3. Cooked leaves sometimes dried and kept as flatcakes called "cabbages" (*omavanda*). This has same Kwanyama name as *Sesuvius sesuvioïdes* which is commonly eaten. People in two areas said that humans there did not eat this particular plant, probably due to bitter qualities.

According to Watts and Breyer-Brandwijk (1962), used as an anthelmintic (taenicide) in India, Indonesia, and Madagascar, and in other parts of tropical Africa as a remedy for diarrhea and miscarriages.

Glinus dictamnoïdes L.

Loeb 261, 262

Kwanyama: unknown.

Description: herbaceous annual, almost glabrous, succulent, prostrate, much-branched; leaves variable mostly lanceolate to elliptical; flowers 5-merous, margins of sepals scarious, 5 carpels; fruit a capsule, many-seeded, seeds kidney-shaped, seeds on a long funiculus with an appendage at apex (stropholium). New to South West Africa.

Uses: unknown.

Limeum fenestratum (Fenzl) Heimerl

Rodin 9146; *Loeb 120* (Det. as *Semonvillea*)

Semonvillea fenestrata Fenzl
Limeum frutescens Dinter
L. glaberrimum Pax

Common names: klosaarbossie.

Kwanyama: *oluide* (from Philemon), *olubanana, omalubanana* [big-baby], for *Loeb 120*.

Description: herbaceous annual 1 m high, leaves linear to linear-lanceolate; a terminal bifurcating scorpioid cyme; flowers with 5 petals, 7 stamens (rarely 5), white, soon falling off, ovary spherical, forming 2 semispherical winged mericarps when mature.

Uses: upper parts of plant boiled and tea drunk for cough.

Limeum myosotis H. Walters var. *myosotis*

Rodin 9101, 9246

L. viscosum var. *hispidulum* Welw.
L. pseudomyosotis Schellenb.

Kwanyama: unknown.

Description: erect annual herbaceous plant, stems and leaves covered with glandular hairs; leaves oblong-obovate to obovate, erect or arched downward; flowers white in scorpioid cyme, 5 petals, staminodia present and exserted; ripe fruit mostly black, rough, reticulate surface without basal lobes, forming 2 semi-spherical nutlets 1.5–2 mm wide.

Uses: unknown.

Limeum viscosum (Gay) Genzl subsp. *viscosum*
Rodin 9100

Common name: klosaarbossie.

Kwanyama: unknown.

Description: suberect herbaceous annual, branched at base, leaves and stems heavily pubescent and viscous; leaves ovate to lanceolate; flowers white in scorpioid cymes, flowers 2.5–3.5 mm long, sessile or on short pedicels, staminodia absent or included within flower, very short, readily deciduous; spherical fruit forms mericarps 1.5–2 mm wide, surface reticulate like honeycomb or with short prickles.

Uses: 1. Leaves put into large calabash butter churn with milk and cream to get more butter. 2. Leaves and stems made into tea for people with sick stomachs.

Mollugo cerviana (L.) Ser.
Rodin 8986, 9204

Pharnaceum cerviana L.

Kwanyama: *okaxungu,* formerly *okahungu.* See also *Euphorbia forskalii* for same name and uses.

Description: small much-branched prostrate annual, leaves clustered, linear, 0.5–2 cm long, or basal leaves orbicular-ovate or spatulate; inflorescence axillary as single flowers or small forked cymes; flowers small on pedicels 0.5–2 cm long, 5-merous, 5 stamens, ovary with 3 carpels and 3 short styles; capsule dehiscent by 3 valves, numerous small pear-shaped seeds, mostly dark brown.

Uses: leaves and twigs used as potherb mixed with other greens in special dish called *eta-pate.*

MORACEAE

Ficus petersii Warb.
Rodin 8956, 9281

Common names: Peter's fig, wild fig, Peters se wildevy, wildey, wurgvy.

Kwanyama: *omungholyo, omingholyo* (pl.) for trees, formerly *omuñoljo, ongholio, eengholio* (pl.) for fruit.

Description: large spreading tree 30 m high and to 33 m wide, young branches pubescent, becoming glabrous with age; leaves 4–10 cm long, elliptical to obtuse-ovate, to orbicular, entire and glabrous; fruit a spherical fig with all flowers enclosed within receptacle, 10–16 mm across covered with short, thick, soft hairs, sometimes turning reddish to brown as they mature. Distinguished among Ovamboland species because fruit always occurs singly and sessile in axil of a leaf, and is smaller than fruit of *Ficus sycomorus.* Merxmüller (1966–72) does not record this species as occurring in Ovamboland.

Uses: 1. Fruit eaten raw dried, but considered to have a less desirable taste than the *ongholio, F. sycomorus.* 2. Milky latex from stems used as glue to hold feathers on arrow shaft, along with small sinews. Arrowheads, however, sometimes attached with beeswax. 3. Fruit sometimes made into brandy, *olambika.*

Ficus sycomorus L.
Rodin 2624, 2699, 8909, 8964; Loeb 114, 145, 172

F. gnaphalocarpus (Miq.) A. Rich. (name used by Loeb)
F. damarensis Engl.

Common names: wild fig, wildevy. This is a widely distributed species and is the sycamore of the Bible.

Kwanyama: *omukwiyu, omikwiyu* (pl.) for trees; *onghwiyu, eenghwiju* (pl.) for fruit, usually used in the plural form; *odive,* first fruit each year, formerly spelled *eñiju.*

Description: tree to 20 or more m high and wider than high, bark smooth gray, sometimes flaking on older trees; leaves to 15 cm long, dark green subcordate or ovate to orbicular, margins with spaced blunt serrations, pubescent to some degree on both sides, rough surfaced; fruit forms spherical figs 1.5 or usually to 2.5 cm in diameter occasionally singly, but more frequently in panicles, pendulant to 1 m long, fruit a thicker fleshy layer than most European varieties and is yellow and sweet when ripe, and edible, but lacks flavor of cultivated European figs.

Uses: 1. Fruit eaten raw or dried for later use. 2. Sometimes figs cooked in water, allowed to ferment and distilled as brandy (*olambika*). 3. Fallen fruit not only eaten by humans, but by goats, cattle (picking the ripest), by many species

of wild buck or antelope, by some birds, and monkeys.

Watt and Breyer-Brandwijk (1962) mention in tropical Africa parts of the tree are used as a remedy for illnesses, such as bark and latex for chest congestion, latex on inflammations, an infusion taken for throat irritations. Masai use dry stems for starting fires by friction, and French have found the leaf is good food for livestock. Some Africans feed fruit and leaves to cows to increase milk production.

It should be noted that LeRoux (1971) uses Kwanyama name *omulemba* for *Ficus petersii,* and *omungholya* for *Ficus kiloneura* Hornby. He uses *omholya* and *omukuyumba* for *Ficus glumosa* (Miq.) Delile. These do not agree with the Kwanyama names given by my informants, but my chief informant said that *F. petersii* is sometimes called *omulemba* by Kwanyamas living some distance north in Angola.

One additional fig was collected, which is edible but not of high quality, *Ficus capreifolia* Delile (*Rodin 9190*) along the banks of the Kunene River some miles below the Ruacana Falls, but technically outside of Ovamboland.

Morus nigra L.
Rodin 2675, 9115

Common names: black mulberry, moerbeiboom.

Kwanyama: none, since is a recently introduced tree.

Description: tree ca. 8 m high, bark smooth and gray; leaves subcordate 5–15 cm long, slightly asymmetrical, coarsely serrate; inflorescence a pedicelled catkin which forms a multiple fruit with druplets, somewhat resembling a blackberry; fruit whitish tinged with purple, sweet and edible. An introduced species which is not common yet, but grows well.

Uses: fruit eaten raw.

Myrtaceae

Psidium guajava L.
Rodin 8960

Common name: guava.

Kwanyama: *omungwaava, ominwaava* (pl.) tree, with plural form always used.

Description: cultivated tree introduced from tropical America, to 7 m high, leaves evergreen, elliptical to oblong-elliptical, ca. 10 cm long; flowers white axillary and solitary, calyx enclosing flower bud, ca. 2.5 cm in diameter or less; fruit spherical to obovate or oblong to 6 cm here, reported to 10 cm in some forms, yellow outside with a pleasant attractive fragrance, inside flesh pink and center filled with numerous spherical rather large seeds. Ovambos say tree does well even in drought.

Uses: fruit is eaten raw.

There were guava trees in Ovamboland in 1947 on my first visit, but in 1973 many more had been planted, apparently in last ten years, always with a fence of cut thornbushes around them to keep away cattle and especially goats. I spoke to one man who brought his trees home when he returned from a contract in mines ten years ago.

Nymphaceae

Nymphaea capensis Thunb.
Rodin 9228

Common names: water lily, blue lotus.

Kwanyama: *edo.*

Description: aquatic growing in water in *oshanas* throughout Ovamboland; roots from a rhizome in mud; leaves orbicular to elliptical, floating, somewhat thick and coriaceous, margin with some curved teeth, apical region usually entire, 8–40 cm across, large flowers 6–20 cm in diameter, blue, some fading toward white with age, 4 sepals lanceolate to ovate, green, petals rather numerous (between 12–25), stamens numerous; fruit contains many carpels, each with numerous seeds, each small seed covered with a fleshy aril.

Uses: rhizomes which grow imbedded in mud eaten raw. No other part used.

Ochnaceae

Ochna pulchra Hook.
Rodin 2615, 2662

Common names: barnardgif, lekkerbreekboom, morelelle, ysterhout, zeerbos.

Kwanyama: *omumuwe,* also *omue, omive* (pl.) [powerless] or *omuve* in earlier use.

Description: shrub or tree to 9 m high, usually to 5 m in Ovamboland, bark smooth gray to purplish with some flaking; leaves 5–15 cm long, obovate to elliptical with great variation in shape, margins, and apices, coriaceous; flowers 2 cm in diameter, golden yellow, soon abscise, sepals persistent becoming reddish as fruit matures, and somewhat fleshy, anthers dehisce through ter-

minal pores; fruit forms a few black drupes which are pendulous from an enlarged torus.

Uses: 1. Fruit has a fat which is eaten by Bushmen here, but considered inedible by Ovambos. 2. Fat obtained from fruits by boiling them for a long time in water. After cooling solidifed fat is removed and used to polish iron, in recent times to polish guns. 3. Wood of smaller stems used by boys to make arrows. 4. Snuff boxes carved from it according to Loeb (1962). 5. Leaves eaten by women to make men powerless who might wish to trouble them (LeRoux, 1971). 6. If people wish to fight, one will carry a branch, thus rendering his opponent powerless (LeRoux, 1971).

Olacaceae

Ximenia americana L.
Rodin 2612

Common names: wild plum, suurpruim, wildepruim.

Kwanyama: *oshipeke oshikukulu, oipeke oikukulu* (pl.) for plant, although some modern Ovambos (in 1973) said they preferred *oshipukulu, ishikukulu* (pl.); *omheke, eemheke* (pl.) for fruit.

Description: much-branched spiny shrub to 3 m high; leaves clustered, variable from elliptical to ovate to oblong-lanceolate, to 5 cm long, slightly coriaceous; small flowers in axillary cymes or occasionally solitary, calyx 4–5 linear-obtuse 6–10 mm long, 8–10 stamens, flowers white or yellowish-green, bearded inside, ovary flask-shaped 3–4 carpels; obovoid drupe ca. 3 cm long, yellow in Ovamboland, reported orange to red in other parts of southern Africa (White, 1962).

Uses: 1. Dye made from fruit which is mashed and put into large pottery bowl with articles to be dyed, such as cloth, ornaments, palm leaves for basketry, etc. A yellow substance from Kaffir corn or milo maize (*Sorghum caffrorum*) added as a mordant and solution set aside 20–30 days. It becomes fermented, but this does not affect the dye. It is then rinsed and dried. 2. Oil obtained by crushing seeds between sticks of wood and put onto skins of animals used as leather, to keep them soft. 3. Oil from seeds, obtained by crushing in mortar and pestle, mixed with red ochre and applied to skin, hair, and to the leather aprons or skirts worn by women as a cosmetic, a common practice in 1947, but rarely seen in 1973 because most women now wear dresses. 4. Fruit not edible and considered poisonous; true of this one species only, which is pear-shaped and obovoid and is basis Ovambos use for distinguishing it from other species and varieties, which are edible. Watt and Breyer-Brandwijk (1962) report presence of hydrocyanic acid in leaves, fruit, and seeds. 5. Leaves are chewed and spit into the eyes of cattle or goats for infected eyes.

Ximenia americana L. var. *microphylla* Welw.
Rodin 2644, 8440; Loeb 6, 325 (K)

Common names: sour plum, suurplum, doringpruim.

Kwanyama: *oshipeke oshikukulu, oipeke oikululu* (pl.) traditional name of plant, but some now prefer *omupeke woshikukulu.*

Description: a variety that closely resembles the species except this is a spiny tree to 8 m high with very small oblanceolate leaves and oval ellipsoidal orange-colored fruits 2.5–3 cm long, slightly puckery and sour, but edible. Although Excell and Wild (1960–63) included this variety as a synonym of the species, I have chosen to separate them, based on my field observations and my herbarium vouchers which show smaller leaves, different shapes and color for the fruit, and because the variety is edible, whereas the species is not. The variety is not given by Merxmüller (1966–72).

Uses: 1. Fruit eaten raw. 2. Seeds are kept, crushed for the oil, mixed with red ochre for a cosmetic for skin and hair.

Ximenia caffra Sond. var. *caffra* (Sond.) Engl.
Rodin 8948, 9008

Common name: Kaffir plum, Natal plum, wild plum, suurpruim.

Kwanyama: *oshipeke oshimbyu, oipeke oimbyu* (pl.) formerly *osipeke osimbju, oshimbu* and also *ombyu* for fruit.

Description: small tree to 8 m high, young branches and leaves somewhat pubescent, spinescent; leaves elliptic, oblong or lanceolate to 9 cm long, coriaceous; flowers white or sometimes crimson, solitary, axillary, thereby distinguished from *X. americana* which usually has cymes, flowers bearded inside; fruit a subspherical or ellipsoidal drupe about 2.5 cm long, orange turning scarlet-red when ripe; fruit edible but always a little bitter or sour.

Uses: 1. Ripe fruit eaten raw. 2. Fruit never dried or preserved or used for beverages. 3. Oil

from seeds expressed, mixed with red ochre for a cosmetic.

See Watt and Breyer-Brandwijk (1962, Fig. 213) for a color plate.

Ximenia caffra Sond. var. *natalensis* Sond.
Loeb 282

Common names: natal plum, wild plum, suur pruim, wildepruim.

Kwanyama: *oshipeke oshinenepeke, oipeke oinenepeke* (pl.).

Description: tree similar to *X. caffra* var. *caffra* except this variety is glabrous. White (1962) suggested this may be a hybrid.

Uses: similar to those of *X. c.* var. *caffra.*

OLEACEAE

Jasminum fluminense Vell.
Rodin 9182 (Ruacana); *Loeb 80, 494*

J. mauritianum Bojer
J. schroterianum Schinz
J. angulare auct.

Common name: wild jasmine.

Kwanyama: *oshihamulende, oihamulende* (pl.) [thing-of-girl's-headdress].

Description: perennial vine (*Rodin 9182*) or herbaceous shrub; trifoliate leaves, each leaflet on a petiole, ovate to ovate lanceolate, glabrous, 3–5 cm long; flowers white, sometimes reddish on outside, corolla tube 15–25 mm long, 5 or to 9 lobes 10 mm long, calyx lobes less than 1 mm long, short filaments inserted on corolla; fruit a spherical black berry 7–8 mm in diameter, 1-seeded.

Uses: berries sewn into beaded strands, smeared with red ochre and hung in tassels called *epole* in hair of girls during puberty rites (*efundula*).

ONAGRACEAE

Ludwigia abyssinica A. Rich.
Loeb 494, 495, 500 (Det. Merxmüller)

Kwanyama: *oshimbodi-sokomulonga-uanghumbi* [belonging-to-the-Humbis-of-Angola]; also *onghumbi* [a-place-in-Angola].

Description: aquatic herb growing in water or marshy areas, stems strongly angled, leaves elliptical to lanceolate, entire, petiole 5–15 mm long; flowers 4–5 mm long, yellow, 4 petals and sepals with twice the number of stamens, inferior ovary, sepals 3–5 parted 6 mm long, persistent on fruit; fruit a 3–5 parted capsule 1–2 cm long, seeds elliptical to ovate, brown.

Uses: not used.

PALMAE

Hyphaene ventricosa Kirk
Rodin 2617, 9016; Loeb 71, 303, 508

Common names: dum palm, ivory palm, vegetable ivory palm, fan palm, fäscher palme.

Kwanyama: *omulunga, omilunga* (pl.) tall-tree; *oshivale,* young or short-tree; *ondunga,* fruit; *oluvale, eembale* (pl.) leaf blades without petiole; *epokola,* petiole present.

Description: unbranched palm tree sometimes 20 or more m in height, fronds palmately compound, black curved spines to 1 cm long on petiole, fronds to 1.3 m long; inflorescence borne in a spathe, much-branched panicle, to 2 m long; dioecious, small male flowers, 6 stamens borne in pitted recess on spadix, female flowers larger with connate staminodia forming a cup, 3 carpels, 3 stigmas producing 1 dark brown drupe ca. 5–7 cm in diameter, spherical, strongly fibrous but sweet and rather thin mesocarp, large ivory-like central endosperm. Considered most useful plant in Ovamboland.

Uses: 1. Fibrous mesocarp eaten raw. 2. Inner "ivory" of seed carved into buttons and ornaments, sewed on leather aprons and skirts of women for special ceremonial and ritual occasions. Vegetable ivory is so hard it is impossible to chop with an axe. Now cheap plastic buttons are replacing them and the art of carving these in 1973 was dying out. 3. Palm leaves (*eembale*) sometimes used as shade covers on huts for cooking, but if it is to be waterproof, thatching grass must be used. 4. Leaves are broken into thin strips, dried, and used for weaving. They must be soaked in water just before use. They are used for all kinds of coiled baskets (Fig. 21), hats, sleeping mats, mats used on doorways, etc. See *Berchemia discolor* for details about dyeing. 5. Rope made from fibers of leaves by soaking one day in mud, then twisting. Such ropes are often used to tie framework of a house or palisade walls together, tie on thatch, make fish traps, etc. 6. Strong bows made from petioles (*epokola*). Some trade for these bows still continues with bushmen who are more skilled in use of these weapons, depending on them for food. Ovambos hunt primarily for sport except in times of famine. They have killed off most of the antelope species now

FIGURE 20. The author's chief informant, Roland Kalitu, interviewing a woman carrying palm leaves which she had walked 30 miles to gather; no trees of this kind are found nearer her kraal.

in their area, although hunting in 1947 was still quite good. Ovambos once used poison on arrows, rarely if ever used now. See *Adenium boehmianum*. 7. Balance poles (*omtengi*) made from bigger petioles to carry calabashes, etc. 8. Hollowed out trunks of dead trees used as drinking troughs for cattle. 9. Petioles sometimes used as part of frames of huts. 10. Terminal bud or "cabbage" eaten as food and is considered a delicacy. It is now illegal to cut down or remove "cabbages" from palms and there is a fine for anyone killing a palm tree since they are so important in their culture. 11. Fleshy fibrous outer layer of seed (see Frontispiece) removed and fermented to make wine, or further distilled to make brandy (*olambika*). 12. Flower bud cut and sap drips out, fermented to make a wine. It is collected in cups from shell of the fruit of *Strychnos* spp. and in this modern day sometimes in tin cans. A small additional cut is made each day to get the

FIGURE 21. Coiled Kwanyama baskets are woven from split leaflets of the palm, *Hyphaene ventricosa*.—A. Basket weaving.—B. Basket with lid for storage of seeds etc.—C. Large basket for holding *omahangu* flour for porridge.

maximum flow of the sap. Wine is called *omulunga,* which may then be kept for as much as three months and then distilled to make powerful brandy (*olambika*). Not a common beverage, as most reproducing trees are too tall to reach the flower buds. Other fruits are more readily available. 13. Twin seeds commonly used by children as dolls. They may have beads sometimes around the constriction, which represents the neck of the doll. One of Mrs. Loeb's servants presented me with such a doll when I left Ovamboland in 1947, with a cloth skirt sewed on (Fig. 9). Lebzelter (1934) mentions these as one of the most common toys for children. There are no markings for eyes, nose, mouth or ears on head. 14. Skirts, necklaces and bracelets were at one time braided from leaf blades during girls' puberty rites (*efundula*) (Hahn, 1928). 15. Edges of palm leaves, *oluhomo, eehomo* (pl.) used to shape rolled-up edge of a debutante's headdress, *elende, omalende* (pl.), side brims of bride's hat, *omhatela, emhatela* (pl.). Shredded leaves form a strong cord, *ongodi, yeembale* (pl.) which may be dyed to form false hair, although special human hair, *eewiki* (pl.) has traditionally been used on debutantes and brides (Loeb et al., 1956). 16. Petioles and old dried flower stalks commonly used for cooking fires. 17. A stirring spoon, really a flat paddle, from petiole, is used for making porridge from millet (*omahangu*) and some other cooked foods. These are the only "spoons" in their original culture, as porridge and other foods are normally eaten with fingers. 18. A special broom (*olukateko*) made from split leaflets for sweeping the stamping place. Certain grasses and sedges also used for this purpose. 19. A special strainer (*omako*) used in straining out coarse particles in Kaffir beer is made from split leaflets.

Phoenix reclinata Jacq.

Not collected

Common names: wild date palm, dattelpalme, wildedatel(boom).

Kwanyama: *omulunga wangolo* [palm-of-the-white-people].

Description: unbranched trees to 10 m high; leaves pinnately compound to 3 m long, leaflets in 2 ranks, petiole with recurved spines; dioecious, inflorescence a large panicle enclosed within a spathe; small female flowers with filaments connate in the staminodia forming a cup that surrounds 3 almost distinct carpels; male flower has 3 perianth segments, 6 stamens; fruit a thin-

fleshed date, an oblong-ellipsoidal berry 2–2.5 cm long, yellow to yellow-brown, edible. A fairly rare tree in a few restricted areas.

Uses: fruit eaten raw, or preserved by drying.

According to Bosz (1934) an attempt was made to introduce this species into other areas without success. It occurs along tributaries of Kunene River in far western Kwanyama area, as well as in eastern area in moist places.

PEDALIACEAE

Dicerocaryum zanguebarium (Lour.) Merr. subsp. *eriocarpum* (Decne.) Ihlenf.
Rodin 8927

Pretrea eriocarpa Decne.
P. zanguebarium (Lour.) J. Gay

Common names: devil's thorn, dubbeltjie (doring), duiweltzie, elandsdoring.

Kwanyama: *elyata, omalyata* (pl.) [a-thing-which-treads-upon]. See *Harpogophytum.*

Description: prostrate vine, annual or perennial; leaves ovate, deeply lobed or pinnatifid, lower side heavily and upper side lightly pubescent, both sides viscous, 1–3.5 cm long; tubular bilateral flowers, axillary, solitary, pink with purple dots, on pedicels 3.5 cm long; fruit flattened, winged, round, lying flat on ground, 2 sharp prickles or thorns on upper side penetrate hooves of livestock, bare feet of humans, even shoes and bicycle tires.

Uses: cause infection in feet of humans and livestock, and puncture bicycle tires.

Harpogophytum zeyheri subsp. *sublobatum* (Engl.) Ihlenf. & H. Hartman
Rodin 9140 (Runtu)

H. procumbens fo. *sublobatum* Engl.

Common names: grapple plant, beesdubbeltjie, sandoring.

Kwanyama: *elyata, omalyata* (pl.) [a-thing-which-treads-upon]. See *Dicerocaryum.*

Description: prostrate vine, perennial, several branches to 1 m long; leaves oblong-ovate to rounded, entire, petioled, somewhat succulent, 1.5–5.5 cm long; an unusually long tap root with swollen storage organ 15–20 cm underground or deeper, 5–7 cm in diameter; flowers solitary, axillary, tubular, purple to almost white (pink in *Rodin 9140*), sepals narrow-lanceolate 10 cm long, corolla 5–7 cm long with spreading lobes; fruit flattened, somewhat oblong lies on ground, 5–7 cm across with vicious claws on its sides and 2 spines on upper side, many-seeded.

Uses: 1. Sharp claws get caught and penetrate the feet of cattle and goats, or sometimes get in their mouths and must be cut out, causing severe pain. Fruits carefully avoided by man and beast. 2. Children pick flowers to suck out nectar.

Merxmüller (1966–72) calls this just *H. zeyheri* Decn. Fruit appears identical to illustration of *H. pelegrae* Stapf in Hutchinson (1946: 329).

Pterodiscus aurantiacus Welw.
Rodin 9061

P. brasiliensis auct. non (J. Gay ex DC.) Ascherson, Schinz

Kwanyama: unknown.

Description: herbaceous perennial somewhat succulent, 20–50 cm high, branching at base; tap root swollen underground; membranous leaves narrow-oblong to elliptical, 2 cm long, 4 stamens, forked stigma; tubular campanulate flowers bright orange, brown spot at entrance to tube on upper side, light orange outside, calyx 3-parted 2 mm long; fruit an achene widely elliptical to almost orbicular with 2 semicircular pairs of wings 1.5–4 cm wide, and just as long, upper side sometimes violet colored on each carpel, seeds 1–2 unwinged, narrowly elliptical.

Uses: unknown.

POLYGALACEAE

Polygala pallida E. Mey.
Rodin 9092

P. leucocarpa Chodat (this collection identified at PRE as *P. leucocarpa* C. Lod.)

Kwanyama: unknown.

Description: small glabrous annual herb 4–5 cm high; leaves linear 4 cm long, 2 mm wide; flowers pink (*Rodin 9092* light orchid with creamy stripes or veins), bilateral, somewhat resembling a papilionaceous flower with 2 wings 4–4.5 mm long, 2–3 mm wide, a keel 2.5–3.5 mm long; fruit a 2-seeded capsule, seeds 1.5 mm long, spherical, pubescent; caruncle short.

Uses: not used.

Securidaca longipedunculata Fresen.
Rodin 9233, 9294; Loeb 294, 250, 365, 369

Common names: violet tree, wild wisteria, fibre tree, bruidsboom, krinkhout, rootpeultjie.

Kwanyama: *omutihongobe, omitihongobe* (pl.) [tree-of-cattle], name of the plant; *omudiku, omidiku* (pl.) applied only to branches used ceremonially. Loeb et al. (1956) said Kwanyama name, *omidiku,* has a second meaning which implies the powerful lust of a girl for a man, and the term is avoided in ordinary speech.

Description: round thorny shrub of indefinite shape, or a tree to 8 mm high, young branches heavily pubescent; leaves narrow-elliptical to elliptical, 1.5–rarely 6 cm long, peduncle short; inflorescence a simple raceme 3–5 cm long, bilateral flowers resembling a papilionate flower, magenta to violet (*Rodin 9233* was orchid) with white or purple spots or streaks, sweet scented, flower wings rounded 8–11 mm in diameter, keel free, elliptical 10 mm long, sepals broadly ovate 3–5 mm long; fruit a samara with a long single wing, wings 3–4.5 cm long, the fruit resembles a single wing of a maple samara, and contains 1 seed. Not reported previously from Ovamboland by Merxmüller (1966–72).

Uses: 1. Root chewed for gonorrhea (Loeb et al., 1956), and syphilis (LeRoux, 1971). 2. Straight shoots used by boys as rods to hit the girls at time of bundling ceremonies before girls' puberty ceremony (*efundula*). Plant is believed to awaken erotic emotions on part of girls (Loeb et al., 1956). 3. Roots stamped, made into a powder and mixed with hot water for tea to cure constipation. 4. Roots boiled in water and tea drunk for backache.

In Zimbabwe bark used as a substitute for soap (White, 1962). Also a coarse cloth is produced. An infusion of roots is a remedy for snakebite (Exell & Wild, 1960–63). Dalziel (1937) stated leaves used in East Africa for venereal diseases and vaginal discharges.

See Watt and Breyer-Brandwijk (1962: 854, Fig. 222) for an illustration.

POLYGONACEAE

Oxygonum alatum Burch.
Rodin 9104

Common name: suring.

Kwanyama: *oshikanda sefuma, oikanda jomafuma* (pl.) [hand-of-a-frog].

Description: spreading annual, branches ca. 30 cm long, branching mostly from base, stipules papery; stems and leaves with small bladder-like papillae, leaves to 6 cm long, variable shape in *Rodin 9104* from linear-succulent to wide-membranous, usually rhomboidal to lanceolate with large blunt irregular dentations; flowers white, 5 perianth segments, stamens in 2 cycles, outer with 5, inner with 3, 3 styles on pistil; fruit a triangular membranous winged achene, short teeth on 3 wings.

Uses: 1. Tea made from leaves and branches for children with sick stomachs. 2. Infusion used as an enema for epileptic children (Loeb et al., 1956). 3. Remedy for snakebite, but how applied or what parts are used is not known (Loeb et al., 1956). Also see *Aptosimum* for snakebite remedy.

Polygonum sp.
Loeb 156

Kwanyama: *oshimboidi shomomeva* [herb-of-the-water].

Description: material not adequate for identification of species. This genus has a 5-lobed perianth, 3-angled ovary, 3 styles; fruit a lenticular or trigonous achene, enclosed by persistent perianth. Differs from *Oxygonum* because flower parts not constricted above ovary and the persistent perianth encloses fruit.

Uses: unknown.

PORTULACACEAE

Portulaca hereroensis Schinz
Rodin 9239

Kwanyama: unknown.

Description: succulent annual prostrate herb, much-branched, numerous stipular hairs, soon deciduous; leaves opposite, elliptical to broadly ovate, 2–4 mm long; flowers 4-parted, yellow, 3 mm long, stamens 4; fruit a capsule, transverse dehiscence, many small warty seeds.

Uses: unknown.

Portulaca oleracea L.
Rodin 8973; Loeb 260

Common names: purslane, pigweed, pusley, poroselein, misbredie, varkkos.

Kwanyama: *oshimhelewene, oimhelewene* (pl.) formerly *osimelewene; ehaluwewe* also *embodi,* a common name for many small prostrate herbs.

Description: annual prostrate succulent herb, most often reddish stems and leaves; much-branched, branches to 20 cm long, small leaves succulent, cuneate, spatulate, or ovate leaves 10–30 mm, small yellow flowers with 5 notched pet-

als; small capsule, spherical, transverse dehiscence, many small seeds. Only a few stipular hairs compared to other species. Not reported by Merxmüller (1966–72) as being in Ovamboland.

Uses: 1. Fed to pigs, but not eaten in this area by humans. 2. Eaten as a medicine to prevent body swelling, probably a cure for dropsy (Loeb et al., 1956). 3. Birth of twins was considered a bad omen and formerly they killed twins at birth. This plant was mixed with roots of *Entada abyssinica,* according to Loeb et al. (1956), but probably *Entada arenaria,* only known species in that part of Africa, considered a medicine to prevent the mother or members of her family from swelling after birth of twins.

Watt and Breyer-Brandwijk (1962) say used as a food and medicine in many parts of Africa as well as other countries. Contains 1% potassium salt, also some urea and ascorbic acid.

PLUMBAGINACEAE

Plumbago zeylanica L.
Rodin 9393

Common names: Ceylon leadwort, white flowered leadwort, swartwaterbossie.

Kwanyama: *okadimeti* [bitter].

Description: straggly shrub 0.5–1.3 m high; leaves elliptical or ovate-lanceolate ca. 10 cm long, 5 cm wide, on short petiole, few scales present; flowers in spikes, white, corolla tubular, 5 lobes spreading, calyx 5-lobed, 5 alternating teeth, 10–12 mm long, single ovary, 5 filiform styles; fruit a thin-walled 1-seeded capsule. This species not previously reported from Ovamboland by Merxmüller (1966–72).

Uses: 1. Stamped and put on wounds to heal them. Reputed to be a cure for many other illnesses (Canon Gabriel Nameuja). 2. Roots stamped, made into an infusion, applied externally to relieve irritation from measles, smallpox, and nosebleed (Canon Gabriel Nameuja).

According to Watt and Breyer-Brandwijk (1962) used medicinally in India since ancient times, in other parts of Africa and Philippines, for inflammation of mouth and skin, as a diuretic, ecolic, sudorific, and vesicant. Also used for abortions in Africa by inserting root in the vagina, which has caused many deaths.

RHAMNACEAE

Berchemia discolor (Klotzsch) Hemsley
No voucher
Scutia discolor Klotzsch
Phyllogeiton discolor (Klotzsch) Herzog

Common names: bird plum, wild date, wilde dattel, langbessie.

Kwanyama: *omuve, omive* (pl.) for tree; *ombe, eembe* (pl.) for fruit, only plural form used.

Description: unarmed tree to 12 m high; leaves alternate, elliptical, 3–6.5 cm long, petiole 4–10 mm long, short white hairs on veins on lower side of leaf, short darker hairs on veins of upper side; 1–4 small flowers in axillary cymes, golden yellow, ovary located on a disc; fruit a fleshy ellipsoidal drupe with 2 locules, each with one seed, flesh and exocarp yellow, fruit dries brown.

Uses: 1. Fruit eaten raw, has a pleasant flavor similar to dates. Fruit falls to the ground when fully ripe, and is usually picked up off ground. 2. Some fruit dried for later use. 3. Fruit fermented to make wine, and some wine may be distilled to make brandy (*olambika*). The whole fruit is fermented in either case along with water added to cover it, in a large pottery jar, similar to type in which beer is made. Wild yeast strains on fruits cause fermentation. 4. Fruit boiled with strips of palm leaves (*Hyphaene ventricosa*) as an orange dye for designs in basket making, the only orange dye used. 5. Most common dye used for basket designs is dark brown obtained from bark which is crushed, boiled with palm leaf fibers, and allowed to stand for one to several days in mixture to obtain best dark brown color. Dyeing is done only by women. Loeb et al. (1956) attributed the making of a purple dye from bark of this tree, but none of my informants knew of any purple dye, and I believe they were in error. They also state that *Pterocarpus angolensis* is the source of the dark brown dye commonly used in basketry. This is also in error, probably because they did not distinguish between Kwanyama names of the two species: *omuve* for this species, and *omuva* for *Pterocarpus.* 6. Large forked limbs are hollowed out and used as bellows (*omalutumbo*) when *Pterocarpus angolensis* (*omuva*) not available. Animal skins, usually from hares, cover two openings at one end and a stick is attached to each loose skin so that they can move up and down to produce air required in blacksmith's forge. The blacksmith (*omuhambuidi*) places an unglazed clay funnel (*omupepo*) which has been fired between the bellows and the fire, so the bellows won't burn from the charcoal fire. 7. The late Dr. Johan Gildenhuys, former Chief Medical Officer for government hospital at Oshikati said

seeds inhaled and block bronchi of many Ovambos, causing death in some cases from choking. 8. Wood used by boys who herd cattle and for ceremonies as knobkerries, which have a crude knob on one end. 9. Leaves are dried, stamped, boiled in water to make an infusion. Liquid is applied by cloths on head for severe headaches or other sicknesses (Loeb et al., 1956). 10. Seeds used to decorate hair of women (Loeb et al., 1956), using a mastic from fruit of *Diospyros mespiliformis, omwandi.* This was a part of transition rites costume and cosmetic materials. These rites have declined to almost nothing. 11. Wood of small limbs carved into knive handles (Fig. 13c), snuff boxes and occasionally cups. 12. Limbs of trees which die from diseases or insects used in house construction and is a very strong wood.

Tree never cut down because its fruit valued so highly. Watt and Breyer-Brandwijk (1962) say the yellow-brown wood used for furniture in some parts of South Africa, and the sweet fruit is highly valued by Africans.

Helenius integrifolius (Lam.) O. Kuntze
Rodin 9126

Common names: soap bush, seepbos.

Kwanyama: *omupetangobe, omipetangobe* (pl.).

Description: shrub to 3 m high, tendrils, leaves 2–4 cm long, ovate to cordate, petiole 3–10 mm long, flowers axillary in cymes, green to yellow, small, ovary with 3 locules forming a capsule with 1 seed per locule, seeds black, shiny.

Uses: unknown, although used for soap by Shambyu in the Okovango, who call it *murora* [soap].

Helenius spartioïdes (Engl.) Schinz
Loeb 584

Marlothia spartioïdes Engl.

Kwanyama: *oluuyeti, omaluuyeti* (pl.).

Description: vine or shrub with straight erect cylindrical branches 1 m high; leaves linear to linear-lanceolate, greatly reduced in upper branches, upper side glabrous, lower side with short pubescence; flowers axillary in cymes 1–3 flowered, petals and sepals 3-parted, on short pedicels, inferior ovary with 3 1-seeded carpels; fruit a capsule, seeds shiny, black.

Uses: 1. Filtered liquid from crushed leaves mixed with water dropped into the eyes infected with gonorrhea, using a feather (Loeb et al., 1956). 2. Powdered roots boiled in water and allowed to cool. Six teaspoonsful are taken internally for gonorrhea. This is said to cause heavy urination (Loeb et al., 1956).

Zizyphus mucronata Willd.
Rodin 2620, 8932, 9131 (Runtu), *9289; Loeb 39*

Common names: buffalo thorn, come and I'll kiss you, blinkblaar, buffelsdoring, haak-en-steek, wag-'an-beetjie(doring).

Kwanyama: *omukekete, omikekete* (pl.).

Description: a much-branched shrub or rarely tree to 7 m high with zigzag young stems between nodes; 2 kinds of thorns in pairs at nodes; one curled that hooks you and an adjacent straight one that stabs you as you back up to unhook yourself, hence the Afrikaans name "haak-en-steek" (catch and stick); leaves ovate, glabrous, very asymmetrical at base to 6 cm long with 3 veins from base; flowers small, greenish-yellow, in cymes; fruit a smooth dark red-brown or purplish drupe 1–2 cm in diameter with a somewhat acrid pulp.

Uses: 1. Soft part of ripe fruit eaten but always a little bitter, not widely eaten. 2. Wine is fermented from fruits and sometimes distilled to make a strong brandy (*olambika*). 3. Leaves stamped, put in cold water or sometimes boiled (depending on area in Ovamboland), and one teaspoonful given to children for diarrhea. 4. If a person has a fever, leaves are stamped, mixed with water and drunk. The fever, usually malaria, will go away in three or four days. 5. Bushes cut and used as thorn hedge for cattle enclosures or around gardens. 6. Strong wood used for axe handles. 7. Roots used as a treatment for dysentery when blood is excreted. Young roots ½ cm in diameter are cut into ca. 2 cm lengths and boiled in water until it has a red color. About 1½ teaspoonsful are taken every hour (LeRoux, 1971). 8. Infusion of leaves in water is cure for sore eyes (LeRoux, 1971).

Dalziel (1937) says in tropical Africa the drupe is sometimes regarded as poisonous. Watt and Breyer-Brandwijk (1962) state it is widely used in different tribes of southern Africa as a cure for chest troubles, cough, lumbago, pain, carbuncles, dysentery, etc. Berry has been used as a coffee substitute, and in porridge. Wood has many uses and leaf has value as fodder for domestic and wild animals.

RUBIACEAE

Borreria squarosa Schinz
Rodin 9256; *Loeb 342*

Kwanyama: *etwelakuku linini, omawekuku manini* (pl.) [head-of-grandmother-small].

Description: annual to 30 cm high, leaves opposite, elliptical, ca. 4 cm long, small radial flowers, 4-lobed, tube funnel-shaped, lobes spreading; ovary inferior, fruit forming 2 mericarps.

Uses: 1. Used for colic in infants, although how it is prepared or applied is not discussed (Loeb et al., 1956). 2. Leaves put into hot water, cooled to warm, and given to children as an enema (Canon Gabriel Nameuja).

Loeb 342 was misidentified as *B. scabra* (Schum. & Thonn.) K. Schum. in 1948.

Borreria sp.
Loeb 280

Kwanyama: *okaxupilaunona, ouxupilaunona* (pl.), *xypila* [to-give-an-enema].

Description: incomplete material prevents species determination. An erect pubescent herb with globose fruit. All members of this genus have small white flowers, tubular with 4 spreading lobes and an inferior ovary.

Uses: 1. Stems and leaves made as an infusion douche for purification of a new widow. Used with the douche is a clay phallus from *ondudu* (not identified) (Loeb et al., 1956). 2. Stems and leaves dried, ground to powder, mixed with water, and one spoonful is taken orally for children with upset stomach. 3. Whole plant stamped, and resulting infusion is given as an enema.

Gardenia spatulifolia Stapf & Hutch.
Rodin 9191 (Ruacana), *9232*; *Loeb 543*

G. thunbergia auct. non L. f., Dinter

Common names: Cape jasmine, wild gardenia, kannetjieboom, stompdering, buffelbal.

Kwanyama: *omulavi, omilavi* (pl.).

Description: shrub or tree 3–7 m high, spiny; leaves 3–9 cm long, elliptical to obovate, margins strongly undulating; flowers white, turning yellow in old age, petals 3 cm long, calyx 7–9 lobed, 5–9 corolla lobes; fruit spherical or slightly elongated ca. 7 cm in diameter, very hard, shiny green.

Uses: 1. Hard woody stems used for arrowheads, often with carved barbs (Fig. 13a). 2. Wood burned and smoke inhaled for head colds. 3. Babies have been brought to government hospital at Oshikati who have been given enemas from leaves and always die (Dr. (Mrs.) Clark). 4. Branches placed on thatched roofs as protection against lightning (Loeb et al., 1956). 5. Wood carved for knife sheaths, smoking pipes, and other carvings (LeRoux, 1971). 6. An infusion of roots made with boiling water, then cooled, given to cattle to drink for treatment of tuberculosis (LeRoux, 1971).

In spite of hardness of the fruits, Watt & Breyer-Brandwijk (1962) state it is often eaten by elephants, larger antelope and buffalo in southern Africa. The wood is used in several areas used for tools, clubs, yokes, etc. Watt and Breyer-Brandwijk also report used for treatment of leprosy and syphilis, etc.

Kohautia lasiocarpa Klotzsch
Rodin 8970

Hedyotis thymifolia Presl, nom. illeg.
Oldenlandia lasiocarpa (Klotzsch) Hiern
O. thymifolia (Presl) O. Kuntze, comb. illeg.
O. sordida Krause

Kwanyama: *omutiweyoka, omitiweyoka* (pl.).

Description: erect or decumbent annual; leaves 1 or more cm long, linear to lanceolate, 7–15 mm long, anthers ⅔–¾ as long as corolla tube; calyx and corolla somewhat papillate, as is ovary; fruit a spherical capsule, seeds numerous.

Uses: unknown.

Oldenlandia herbacea (L.) Roxb.
Rodin 9229, 9256a

Hedyotis herbacea L.

Kwanyama: unknown.

Description: erect annual 10–20 cm high; leaves opposite, linear to linear-lanceolate, 1 leaf vein; flowers white, 3–4 mm long, usually in axillary pairs, ovary inferior, 2 carpels; fruit a spherical many-seeded capsule. Not previously reported from Ovamboland by Merxmüller (1966–72).

Uses: not used.

Pavetta zeyheri Sond. (ex LeRoux, 1971)
Not collected

Common names: Christmas bush, Kaffir bush, Kaffer bruid.

Kwanyama: *oshihone.*

Description: glabrous shrub; leaves 0.5–2 cm long, linear-oblanceolate; flowers in cymes, corolla 4-lobed, tube 7–10 mm long, corolla lobes

5–7 mm long, white, 2-celled inferior ovary, seeds hemispherical, 1 per carpel.

Uses: *oshihone* described by Loeb et al. (1956) as one of the four sacred plants over which people walk for new kraal ceremony.

Vangueria infausta Burch.
Rodin 9003; Loeb 198
V. tomentosa Hochst.

Common names: wild medlar, grootmispel, wilde moepel.

Kwanyama: *ombu, omibu* (pl.) for tree, or *oshimbu,* sometimes *omumbu, omimbu* (pl.); *ombu, eembu* (pl.) for fruit. Also see *V. parvifolia* and *V.* sp.

Description: tree 6–7 m high or shrub-like; leaves opposite, broadly elliptical to rounded, wrinkled along midrib, covered with velvet hairs, as are young branches and sepals; flowers in short-stalked cymes, campanulate, 6–8 mm long, greenish; fruit a spherical drupe, brown and sweet when ripe, 1–2.5 cm in diameter with 5 stone fruits.

Uses: 1. Fruit eaten raw or dried for dry season. 2. Fruit fermented a few days for wine, which may be distilled to make brandy (*olambika*). 3. Tree is valued so highly for fruit it is never cut down.

Vangueria parvifolia Sond.
Rodin 2634, 2705
Tapiphyllum parvifolium (Sond.) Robyns

Common names: bergmispel, kleinmispel, wildemispel.

Kwanyama: *omumbu, oimbu* (pl.) for tree; *ombu, eembu* (pl.) for fruit.

Description: shrub; leaves clustered near the end of branches; flowers in clusters, small, green; fruit globose 3.5–4 cm in diameter, green to reddish when ripe. Not previously reported from South West Africa, possibly misidentified and should be *V. infausta* as it has same Kwanyama names and uses.

Uses: 1. Fruit eaten raw. 2. Fruit dried and saved for rainy season. 3. Fruit fermented and distilled to make brandy (*olambika*). 4. Arrowheads carved from hardwood of stems, often barbed and not fastened tightly to arrow shaft, so that when an animal claws, only shaft will be removed. Also see *Gardenia spathulifolia.*

RUTACEAE

Citrus aurantifolia Swingle
Rodin 8961

Common name: lime.

Kwanyama: *omungongo, omingongo* (pl.) for tree; *ongongo* for fruit.

Description: tree 15 feet high, leaves ovate glandular punctate, flowers white, fragrant, fruit nearly spherical to somewhat elongated, skin leathery, yellow. Cultivated and bearing a heavy crop of fruit.

Uses: fruit squeezed, sugar and water added for a refreshing beverage.

Also observed under cultivation, probably introduced within past ten years: *Citrus sinensis* Osbeck, sweet orange; *Citrus aurantium* L., sour orange; *Citrus reticulata* Blanko, mandarin or tangerine; *Citrus limon* Burm. f., lemon. All these citrus fruits are eaten raw or used in fresh beverages. See note under *Psidium guava* about protection of trees.

SALVADORACEAE

Salvadora persica L.
Rodin 9185

Common names: salt bush (Loeb), tooth-brush tree, kerrieboss, currybos.

Kwanyama: *enghadu, omanghadu* (pl.) [the-thing-which-gives], old form: *enadu.*

Description: shrub or vine-like habit; leaves rather thick, entire, lanceolate to elliptical, rounded or mucronate apex, few lateral veins equally visible on both sides; flowers small, greenish-white in many-flowered terminal panicles; fruit small reddish or purple berry-like drupes about 6 mm in diameter. Loeb states leaves and fruit are aromatic, leaves bitter.

Uses: vegetative parts of plant crushed, mixed with water, rubbed over entire body when covered with a rash called *oshitula* [rash-over-entire-body] which is German measles (*okamuenjenje*), or for a more severe rash, *oshinghwenyene,* possibly scarlet fever.

SAXIFRAGACEAE

Montinia caryophyllacea Thunb.
Rodin 9197 (Ruacana)

Common names: pepper bush, pepper tree, bergklapper(bos), peper (bos), pfeifenstrauch.

Kwanyama: unknown.

Description: dioecious shrub 1.3 m high; leaves elliptical to oblanceolate, 1.5–7 cm long; male flowers in axillary panicles, calyx lobes triangular, corolla ovate to rounded, white, 3–5 mm long; female flowers apical, single or only a few, calyx and corolla as in male but stamens reduced to small staminodia, ovary inferior; fruit an ellipsoidal capsule 15–20 mm long, seeds thin-winged.

Uses: unknown.

Put into Saxifragaceae by Engler and kept there by Phillips (1951), put into Escalloniaceae by Hutchinson (1946), and into Montiniaceae by Merxmüller (1966–72). I have retained it in Saxifragaceae.

Vahlia capensis (L. f.) Thunb.
Rodin 9091

Kwanyama: unknown.

Description: herbaceous annual 10–30 cm high, branching from base, covered with short straight stellate hairs; leaves opposite, entire, small, linear to linear-lanceolate, to 3.5 cm long; flowers paired on pedicels 1 cm long, 5 free non-deciduous sepals, lanceolate to 5 cm long, 5 free yellow petals as long or a little shorter than sepals; ovary inferior, semispherical with numerous ovules; fruit a dehiscent more or less spherical capsule, seeds small.

Uses: unknown.

This genus was put into Saxifragaceae by Phillips (1951) and Hutchinson (1946), but into Vahliaceae by Merxmüller (1966–72). I have retained Saxifragaceae.

Scrophulariaceae

Alectra vogellii Benth.
No voucher

Common name: geelblom.

Kwanyama: *onime, enime* (pl.) [lion]. Also see *Buchnera* sp. and *Striga hermonthica.*

Description: herbaceous annual branched from base, to 40 cm high; leaves opposite, linear-lanceolate, 35 mm long, not drying black; flowers yellow, 10 mm long; fruit a capsule; semiparasitic weed of cultivated areas, especially on Leguminosae.

Uses: given to children with a fever as an enema (Loeb et al., 1956). Also see *Buchnera.*

Aptosimum decumbens Schinz
Rodin 9082; Loeb 596

Kwanyama: *ektadiai* (Rodin in 1973), *odimbulufi, edimbulufi* (pl.) [a-thing-which-reminds] (Loeb in 1948).

Description: prostrate herb; leaves lanceolate to linear-elliptical, ca. 3–4 cm long; flowers single in leaf axils, corolla tubular, blue-purple, throat white, some purple at base of corolla lobes; fruit a capsule, nearly spherical.

Uses: 1. Taking a tea, or even chewing the leaves, will improve a poor memory (Canon Gabriel Nameuja). 2. Leaves made into tea and put on wounds heal them. 3. Biting into roots relieves stomach illnesses (Loeb et al., 1956).

Aptosimum sp.
Loeb 534 (K only), *597, 153b, 596,* the latter appears to be a different species

Kwanyama: *oshikanda shefuma, oikanda yomafuma* (pl.) [hand-of-a-frog], *oshiveta* for *Loeb 534, 597.* See also *Oxygonum alatum, Dichoma* sp., *Bergia decumbens,* and *Blechnum punctulatum.*

Description: herbaceous annuals; flowers small, tubular.

Uses: 1. Infusion used as an enema for epileptic children (Loeb et al., 1956). 2. Infusion used for snakebite (Loeb et al., 1956), but not clear if taken internally or applied externally. See *Oxygonum alatum* for same uses as 1 and 2. 3. Crushed, put on fresh wounds for healing, as other plants called *oshiveta* (*Oxygonum alatum* and *Dichoma* sp.) (Loeb et al., 1956).

Buchnera sp.
No voucher

Kwanyama: *onime, enime* (pl.) [lion]. See *Striga hermonthica.*

Description: rigid scabrid herb which turns black on drying and stains paper blue-black. *Buchnera* is an erect herb with opposite leaves; inflorescence a terminal spike of 5-lobed tubular flowers, fruit a capsule.

Uses: given in an enema to children with fever (Loeb et al., 1956). See *Alectra vogellii.*

Without a voucher there is no way to know which species is represented, but Loeb's observation may have actually been *Striga hermonthica,* once in *Buchnera,* which has the same Kwanyama name.

Selago sp.
Loeb 256, 373

Kwanyama: *olune* (*Loeb 256*), *ohoni* (*Loeb 373*).

Description: *Loeb 373* has a long woody taproot, stems mostly herbaceous, about 20 cm high, an African genus with 5 lobes on calyx and corolla, flowers mostly regular, funnel-shaped, stamens 4, inserted at base of corolla tube, fruit a subglobose capsule, seeds flat on one face.

Uses: 1. Vegetative parts are mixed with milk to pacify dogs in kraals. 2. Given as a protection against rabies in dogs. See *Cordia ovalis* and *Dissotis* sp.

Striga hermonthica (Delile) Benth.
Rodin 9397

Buchnera hermonthica Delile

Kwanyama: *onime* [lion], so named because plant kills Kaffir corn (*Sorghum*).

Description: herbaceous green semiparasite attached to roots of *Sorghum*, to 50 cm high; inflorescence a spike of showy orchid flowers, lower lips slightly longer than upper lips.

Uses: men do not play with it because it removes their manliness and prevents erection of the penis.

Known by Ovambos to spoil Kaffir corn, so women pull it out. My informant (Roland Kalitu) said there are two kinds of *onime*, a strong one and a weak one. This he considered strong, but could not find the weak one, also called *onime*.

SOLANACEAE

Capsicum annuum L.
Rodin 2679, 9031; Loeb 234, 236

Common name: chili pepper.
Kwanyama: *ondungu*. See *C. frutescens*.

Description: cultivated annual 0.3 m high, peppers black, turning red when mature, fruits short, conical, very hot to taste. Introduced from South America. Not too widely used.

Uses: 1. Spice for cooking, especially with meat. 2. Taken in water or with meat for an upset stomach.

Capsicum frutescens L. var. *conoïdes* Bailey
Rodin 9155 (Rundu)

Common name: chili pepper.
Kwanyama: *ondungu*. See *C. annuum*.

Description: cultivated perennial shrub 1.3 m high bearing hundreds of short, conical fruits, very hot to taste, very similar to those of *C. annuum*. Introduced from South America, now cultivated worldwide.

Uses: not eaten raw; used in cooking with meats or vegetables. Although meat is now usually cooked in heavy round cast iron pots, sometimes chilies are cooked with meat on the coals.

Datura innoxia Mill.
Rodin 9056

Common names: thorn apple, stinkblar.
Kwanyama: *enumu*. See *D. metel*.

Description: herbaceous much-branched plant 0.6 m high; leaves large, ovate, margins somewhat irregular; corolla to 20 cm long, white, funnel form, calyx tubular covering base of corolla tube; fruit a spiny ovate capsule, seeds black, numerous.

Uses: tea made by boiling roots in water is given to people who have gone mad (violet) and they become quiet. My informants did not know of any deaths that had resulted from this treatment.

Watt and Breyer-Brandwijk (1962) report that some workers claim only one alkaloid is present: l-hyoscine (scopolamine). Others claim presence of hyoscyamine, meteloidine, and others. Total alkaloidal content of root is .541%, in seed .439%, and in leaf .39%. When used as an intoxicant in South Africa has proved fatal; sucking nectar of one flower by a child resulted in poisoning. Not previously recorded from Ovamboland.

Datura metel L.
Rodin 2679; Loeb 234, 236 (Det. PRE, 1948)

Common names: hairy thorn apple, metel, stinkblaar.

Kwanyama: *emumu, omamumu* (pl.).

Description: much-branched herbaceous plant ca. 1 m high; leaves broadly ovate to triangular-ovate, sub-entire with some dentate lobes, flowers large, white or purple, trumpet-shaped, 15–20 cm long; capsule ovate, covered with prickles. This species is not reported from South West Africa by Merxmüller (1966–72), and although *D. innoxia* was not reported from Ovamboland, is widely distributed throughout South West Africa, as close as Grootfontein. These specimens may have been misidentified and should now be put under *D. innoxia*.

Uses: 1. Poisonous to humans and cattle, in spite of the common occurrence as a weed in areas where cattle are kept at night. Leaves and stems cause death to cattle if eaten (Watt & Breyer-Brandwijk, 1962). The poison element is hyoscine (scopolamine) with small quantities of hyoscamine, atropine, and related alkaloids. Hyoscine is present in seeds and leaves according to Dalziel (1937) and are usually fatal to humans. 2. Roots boiled in water, steam allowed to go on an eye with white spots for a cure. 3. Shredded roots mixed with water, given to cattle for lung sickness (Loeb et al., 1956).

Nicotiana tabacum L.
Rodin 9154 (Rundu)

Common names: tobacco, tabak.

Kwanyama: *omakaya* (leaves for smoking or snuff).

Description: commonly cultivated robust annual to 1.3 m high; leaves large, ovate, viscid-glandular, tubular flowers white, pinkish or cream colored.

Uses: 1. Tobacco is smoked mostly in short-stemmed pipes by men and women. They keep it in wrapped up wads the size of a fist. A small amount is cut off from time to time to smoke. 2. Snuff (*omakaya ofenya*) is made by stamping tobacco to a fine powder in the mortar and pestle and mixing it with ashes of the fruit axis of *omataku, Entandrophragma angolense.* The powdered tobacco and ashes are mixed in a special small calabash (*ofenghelo*), then stored in carved wooden snuff boxes (*ofenya*).

Introduced from South America, probably by Portuguese via Angola to the north. Reported by Hahn (1928) grown in Ovamboland for smoking tobacco. Now fairly common in kraals, but not in quantities to keep a family in tobacco. Just a few kilometers north in Angola, twisted rings of home grown tobacco is sold in open air markets. In Ovamboland most small shops of Africans have cut, cured tobacco for pipes, grown in Zimbabwe or southern Africa.

Solanum damarense Bitter
Rodin 8998

Kwanyama: unknown. Similar in appearance to *onululu, S. delagoense.*

Description: low herbaceous perennial, leaves lanceolate to oblanceolate, spiny, unlobed, covered with stellate hairs; flowers white, saucer-shaped, 12–14 mm across; berries spherical, yellow, ca. 1 cm in diameter.

Uses: unknown.

Solanum multiglandulosum Bitter
Rodin 8997

Kwanyama: unknown. Similar in appearance to *onululu, S. delagoense.*

Description: very similar in appearance to *S. damarense,* a low herbaceous spiny perennial; leaves ovate, sometimes almost cordate, stellate hairs with many glandular hairs; flowers saucer-shaped, orchid, 10–16 mm across, berries spherical, yellow, ca. 1 cm in diameter.

Uses: unknown.

Solanum delagoense Dunal
Rodin 9053

Common names: bitterappel, geelappel.

Kwanyama: *onululu.*

Description: shrub-like, upper branches herbaceous, woody at base, ca. 0.6 m high; leaves elliptical, lanceolate to oblanceolate, margins entire, somewhat spinescent, tomentose on both sides; flowers saucer-shaped, orchid, 2.5–3 cm across; berries mottled green when immature, yellow when ripe, 2.5 cm in diameter.

Uses: 1. Fruits crushed, put on wounds to heal them. 2. Roots chewed, or fruits crushed, put in water for a cough. 3. Leaves boiled in water, tea drunk for an upset stomach.

Solanum nigrum L.
Loeb 448, 514

Common names: black nightshade, deadly nightshade, inkberry, balbessie, inkbessie, nachtshade, nagsshade.

Kwanyama: *ndemukolenghula, oondemukolenghula* (pl.) [I-joked-with-him].

Description: much-branched erect annual; leaves ovate to elliptic-ovate, irregularly lobed or toothed, ca. 2.5–5 cm long; corolla saucer-shaped, white, purpling in age, 4–5 mm across; berries spherical blue-black, 4–5 mm in diameter.

Uses: ripe berries, but never green ones, are eaten raw.

Berries very poisonous when green, but considered non-toxic when ripe, and eaten raw in southern Africa. In America reported toxic when mature. Watt and Breyer-Brandwijk (1962) also report poisoning from leaves and fruits, and that

toxic material varies in different localities. Active chemicals are the alkaloid solanine and a mydriatic alkaloid as well as several solasodine glucosides. Fresh leaves contain ca. 1% ascorbic acid (vitamin C).

Solanum tuberosum L.
No voucher

Common names: white potato, Irish potato, ertappel, aartappel, cetewayo, kartoffel.

Kwanyama: *oihakautu*, taken from the Herero.

Description: herbaceous annual grown during rainy season, planted from "seed potatoes," sprouted tubers, which are cut into several pieces, each with at least one "eye" or bud. Mature plants have white or purplish flowers in small umbels or cymes which are sterile and produce no fruit or seeds. Underground tubers are rich in starch, edible.

Uses: Hahn (1928) first reported use of potatoes in Ovamboland. Ovambos peel, cut up, and boil potatoes, which are sometimes eaten with meat. I did not see any growing and did not see Ovambos purchase them at the Oshakati store, or eat them.

Solanum sp.
Rodin 9238

Kwanyama: possibly *onululu*.

Description: shrubby plant 0.6 m high, woody base, leaves lobed, spines on stems and petioles, rarely on leaf midrib; flowers absent on my specimen; fruits a spherical berry nearly 1 cm in diameter, orange. Very similar to *S. delagoense*.

Uses: roots chewed for a cough.

Withania somnifera (L.) Dunal
Rodin 9227

Common names: bitterappeliefie, genees-(blaar)bossie, vuilsiektebos.

Kwanyama: *oshilumembodi*.

Description: herbaceous, ca. 1 m high, covered with stellate hairs; leaves ovate 7–15 cm long, unequal at base of blade, flowers more or less cup-shaped, petals somewhat reflexed, small, about 5 per umbel in leaf axils; berries spherical, red when ripe, enclosed in a bladder-like inflated calyx.

Uses: unknown.

Watt and Breyer-Brandwijk (1962) say some workers claim presence of nicotine, somniferine, withananine, etc.; others claim only one unidentified alkaloid plus a dihydric alcohol, somnitol and withanic acid. Although people get sick from fruit, it is not usually considered lethal, and many external medicines from it are used in southern Africa. It has been used in India to produce abortions.

STERCULIACEAE

Hermannia has specialized stamens with broad filaments and pointed anthers, distinctive to this genus.

Hermannia modesta (Ehrenb.) Mast.
Rodin 9075, 9245

Kwanyama: *olutope* (*Rodin 9075*), *okashesheledu* (*Rodin 9245* from Canon Gabriel Nameuja).

Description: annual, much-branched, 30 cm high, somewhat viscous foliage and stems from glandular hairs, stems have mostly stellate hairs; leaves linear, elliptical, or lanceolate; blade 10–14 mm long, petiole 10–35 mm long; 5 free petals, white or pink, turning darker in old age, 5 stamens connate, capsule 6 mm long with one distinctive horn 2 mm long on each of the 5 carpels.

Uses: unknown.

Hermannia guerkeana K. Schum.
Rodin 9319

Kwanyama: *ekatadidi*.

Description: much-branched suffrutescent perennial; leaves linear 20–55 mm long, stellate pubescent, mostly entire, some slightly dentate near apex; flowers pink, petals short, stamens pink or red; fruit almost spherical with horns on each of 5 carpels.

Uses: leaves and twigs made into infusion for stomachache, given as an enema when cooled (Johannes K. Oska, 104 km east of Oshikango).

Hermannia quartiniana A. Rich.
Loeb 62, 522, 524

Kwanyama: *etatadidi, omakatadidi* (pl.).

Ndonga: *ekatandindi*.

Description: low growing, much-branched perennial; leaves oblong-lanceolate or cordate, coarsely toothed and short petioled; flowers yellow, pink or red, petals 5, about 8 mm long, campanulate calyx 7 mm by 7 mm, distinctive stamens cruciform tuberculate pilose filaments

about 2.5 mm long; capsule ellipsoidal, 6 mm by 8 mm long.

Uses: roots chewed for a cough.

Melhania acuminata Mast.

Rodin 9083, 9118; *Loeb 562, 563* (K only)

Kwanyama: *ohomo, eehomo* (pl.). Also see *Petalidium* sp.; also *oshiveta,* used for several herbs put on skin to heal sores; older form: *osiveta.*

Description: shrub-like, 1 m high with herbaceous branches covered with grayish pubescence; leaves oblong to ovate, margins serrate or crenate, to 11 cm long, *Rodin 9083* to 7 cm long, stellate hairs on veins on lower side; flowers yellow 2.5 cm across, 1–3 on axillary peduncles, flowers open for one day only, sometimes only in morning; fruit a 5-sided capsule covered with stellate pubescence.

Uses: leaves made into an infusion, put on wounds to heal them. In eastern Kwanyama area leaves stamped instead of being boiled for sores.

Waltheria indica L.

Rodin 8992; *Loeb 237*

W. americana L. var. *indica* K. Schum.

Common name: meidebossie.

Kwanyama: *oshihakulamesho* [curer-of-eyes].

Description: shrub 0.3–1 m high; leaves ovate, margins serrate or somewhat crenate, to 10 cm long, covered sparsely with stellate pubescence, 5 pairs of secondary veins; flowers in axillary globose heads, yellow; capsule obovoid, 2 mm by 3 mm, villous. Bast fibers in stems very tough.

Uses: sap used for eye medicine. Stem is squeezed and sap is dropped directly into eye. Based on Watt and Breyer-Brandwijk (1962), Ovambos are the only tribe using the plant for eye medicine. It contains no alkaloids, but has given positive tests for presence of flavonoids, sterols and tannins.

Watt and Breyer-Brandwijk (1962) say this plant has many medical applications such as an emollient, for barrenness, internal hemorhages, antisyphilitic, etc.

TILIACEAE

Corchorus tridens L.

Rodin 8933, 9062, 9224, 9378; *Loeb 192*

Kwanyama: *okalyaoipute, oulyaoipute* (pl.) [*oka - lia - iapute* = things - which - eat - put - on - wounds]; also *okaliamundilo,* name used when applied to heal burns.

Description: erect herbaceous perennial to 45 cm high or prostrate branching stems, varying degrees of pubescence or none; roots woody; leaves oblong to lanceolate, margins serrate, variable in size and shape 2.5–7.5 cm long; flowers in small cymes opposite leaves, 4 (or 5) sepals and 4 (or 5) yellow petals; ovary inferior forming a cylindric capsule somewhat ribbed to 4 cm long, terminating in 3 sharp spreading beaks.

Uses: 1. Leaves chewed, put on cuts and wounds to heal them. 2. Leaves crushed, put on burns to heal them. 3. Stems and leaves dried, pounded to a powder, placed on open wounds of the glans penis, in the arm pits, and corners of mouth as a treatment for syphilis (*okadongo*) in men (Loeb et al., 1956).

Excell and Wild (1960–63) noted eaten as spinach and used for its fibers in Nyasaland.

Grewia deserticola Ulbr.

Rodin 2709, 8928, 9304

Kwanyama: *omushe, omishe* (pl.) also *omuse,* and in eastern Kwanyama area *omuuila.* See *G. falcistipula.*

Description: shrub or small tree to 5 m high; leaves ovate to broad-ovate, to 7 cm long, base often asymmetrical, finely toothed margin; flowers in cymes, stamens numerous on androgynophore, petals and inner side of sepals yellow, 5 sepals 11–15 mm long, 5 petals somewhat shorter, spherical unlobed drupe fruit, each surrounded by endocarp, covered with stellate hairs, warty, to 4 seeds.

Uses: 1. Fruits eaten raw, dried, sometimes fermented and made into brandy (*olambika*). 2. Fish traps made from straight branches. Traps are conical with large part of cone at base, and a small hole where fish enter trap. Once inside fish rarely get out. One trap is used for several rainy seasons, as they catch fish in *oshanas* filled with water from overflow of the Kunene River in Angola. Now many families buy modern nylon fishing nets. 3. Arrow shafts made from straight small branches. 4. Small branches used as toothbrushes after fraying the fibrous parts on one end. 5. Roots chewed, spit on wound caused by a poisoned arrow. It is usually applied by a doctor (*omufipi*). *Grewia avellana, omukopakopa,* can be applied the same way. The doctor will be poisoned if he sucks the wound (Loeb et al., 1956). 6. Root is chewed and mixture rubbed

into the eye or skin inflammation caused by irritating pungent fluid squirted from back end of a large carabide beetle, *ekelekenje,* which blinds the eyes. Breast milk is also used as an eyewash in such cases (Loeb et al., 1956). See *G. retrinervis.*

Grewia falcistipula K. Schum.
Rodin 9145 (Rundu), *9313*

Kwanyama: *omwila, omuilla,* old spelling.

Description: shrubs 1.3 m high, branching almost entirely at ground level; leaves elliptical, 2–4 cm long, petiole 2 mm long, young leaves and flower buds covered with brown stellate hairs; flowers single in leaf axils, petals and inner side of sepals yellow; fruit spherical, 1.5–1.6 cm in diameter, the largest of any species in southern Africa, yellowish brown, sweet when ripe, 6–8-seeded.

Uses: 1. Fruit eaten raw when ripe. 2. Fruit used for making brandy (*olambika*). 3. Straight stems used for arrow shafts. 4. Roots eaten, mostly by Bushmen living among the Kwanyamas as servants.

Grewia flava DC.
Rodin 9076; *Loeb 464*

G. cana Sond.

Common names: wild currant, bessiebos, brandewynbessie, rosyntjiebos.

Kwanyama: *omuhonga, omihonga* (pl.) for plant; *eeshe* for fruit. See *G. tenax.*

Description: shrub less than 2 m high, covered with gray tomentose pubescence; leaves elliptical or oblanceolate, lower sides of leaves lighter green, margins finely serrate or dentate, 3 primary veins from the base; inflorescence 1–3 bright yellow flowers, petals ca. 1 cm long; fruit globose or 2-lobed, ca. 8 mm in diameter, reddish when ripe, sweet, mealy textured.

Uses: 1. Fruit eaten raw or dried for use in other seasons. 2. Fruit, either fresh or dried, may be fermented and distilled into brandy (*olambika*). 3. Smaller straight stems used for arrow shafts. 4. Roots of this plant were probably used as a remedy for pulmonary diseases in cattle. Loeb et al. (1956) referred to *omuhongo,* which is *Spirostachys africanum* as a medicine for cattle, but this is never used by any tribe as a medicine or for healing because it contains very irritating and poisonous latex. In contrast *omuhonga,* this species, is used medicinally in several tribes in South Africa (Watt & Breyer-Brandwijk, 1962), and I believe this is the plant species they referred to. 5. Walking sticks (*okanhali*) are made from the larger, longer stems.

Grewia flavescens Juss.
Loeb 385

Kwanyama: *omukopakopa.*

Description: shrub 2–5 m high, young branches stellate pubescent becoming glabrous, young stems 4-sided; leaves oblong-lanceolate or obovate, some very broad to 12 cm long (Loeb's were 9 cm), margins irregularly serrate, rough pubescent on both sides, but more heavily on under side; petals and inside of sepals yellow, outside of sepals tomentose, sepals 11–15 mm long, petals somewhat shorter; fruit shallowly 2- or 4-lobed berries, yellow-brown, 12–15 mm in diameter, flesh sweet, mealy.

Uses: 1. Leaves chewed, spit on poisoned arrow wounds by a doctor, *omufipi.* He never sucks wound or he will be poisoned. 2. Fruit eaten raw, dried, sometimes made into distilled brandy (*olambika*).

Grewia retrinervis Burret
Rodin 2709

G. flavescens sensu Excell & Mendonça pro parte

Kwanyama: *omuse.* See *G. deserticola.*

Description: shrub 1–2 m high, young stems covered with brown pubescence, older stems round; leaves elliptic-oblong, rounded usually at apex, margins serrate, commonly pubescent on both sides, to 5 cm long; flowers yellow (greenish-yellow in *Rodin 2709*); fruit a globose unlobed berry, ca. 8 mm in diameter, reddish-brown (reddish-black in *Rodin 2709*). Merxmüller (1966–72) includes this as a synonym of *G. flavescens,* but this species has round stems, unlobed berries, and reddish-brown fruits and soft pubescence on leaves whereas *G. flavescens* has 4-angled stems, lobed fruit, yellowish-brown fruits, and hispid pubescence on leaves.

Uses: 1. Roots chewed and spit on poisoned arrow wounds by a doctor (*omufipi*). 2. Fruits eaten raw, or dried, or may be made into brandy (*olambika*). 3. Root chewed, contents rubbed into eye or on skin inflammation caused by a large carabide beetle, *ekelekenje,* which squirts a pungent fluid from his back and blinds the eyes. Breast milk may also be used as an eye bath (Loeb et al., 1956). See *G. deserticola.*

Grewia tenax (Forsk.) Fiori
Rodin 9054, 9180

Kwanyama: *omuhonga*. Also see *G. flava*.

Description: shrub to 2 m high; leaves elliptical, obovate or orbicular to 4 cm long, margins coarsely dentate, nearly glabrous to hispid pubescent with stellate pubescence; sepals 10–15 mm long, petals ca. ¾ as long, petals and inner side of sepals white; fruit a deeply 4-lobed berry (Rodin's sometimes 2, 3 or 4-lobed), shining, glabrous, flesh sweet, mealy.

Uses: 1. Stems used for arrow shafts. 2. Leaves and twigs eaten by goats and cattle. 3. Fruit eaten raw or dried. 4. Possibly used for treatment of lung disease in cattle. See uses for *G. flava*.

Triumfetta pentandra A. Rich.
Rodin 9112

Kwanyama: *nanghanjata*. See also *Achyranthes sicula* and *Pupalia lappacea*.

Description: erect annual 1–2 m high; leaves rounded to round-rhomboidal, apex acuminate, sometimes 3-lobed, margins irregularly serrate, setose pubescent; inflorescence small cymes at nodes, flowers yellow, sepals 4–5 mm long, petals slightly shorter, ca. 5 stamens; ovary 2–5 locular forming an ovoid capsule covered with bristles ciliated along their upper side, uncinate at apex, glabrous, appearing like a cockleburr, seeds semireniform.

Uses: fruits get caught in stockings and clothes, so plant is very much disliked.

VERBENACEAE

Clerodendrum glabrus E. Mey.
Rodin 9050; Loeb 311

Clerodendron auct.

Common names: weeping tree; bitterblaar, huilboom.

Kwanyama: *omululu, omilulu* (pl.) [big-bitter].

Description: much-branched shrub 1.3 m high (*Rodin 9050*) or tree to 9 m high; leaves lanceolate or elliptic to ovate-elliptic, entire, apex acute, to 8 cm long, shiny on top, finely pubsecent beneath; inflorescence dense corymbs, calyx broadly cup-shaped, corolla tube 0.5–1 cm long, glandular pubescent, white; ovary forms a drupe with 2–4 stones, each 1–2-seeded.

Uses: 1. Leaves crushed, mixed with water and rubbed on rashes (Loeb et al., 1956). 2. Arrow shafts made from the slender straight stems.

Clerodendrum uncinatum Schinz
Rodin 9391; Loeb 12, 304

C. spinescens (Oliver) Gürke

Common names: rooi-wag-'n-bietjie.

Kwanyama: *oshiyooseuta, oiyooseuta* (pl.), formerly *osijoseuta, oijoseuta* (pl.) [teeth-of-a-puffadder]. See *Pupalia lappacea*. Also *oshioshita*, formerly *osiosita* [thorn-short-thick-snake].

Description: striking shrub to 1 m high, softly pubescent; leaves ovate to sub-orbicular to 3.5 cm long entire, straight or hooked spines in many leaf axils; flowers solitary, axillary, pedicels slender, calyx 0.5–0.7 cm long, pubescent, corolla scarlet, tube 0.6–1 cm long. Loeb et al. (1956) stated leaves bitter, roots aromatic.

Uses: 1. Roots boiled, cooled, applied as an enema for stomachache. 2. Made into a sprinkling infusion called *ondipa* for a special purification ceremony performed on all entering a kraal where twins have been born. Infusion is sprinkled on face and feet of all entering. 3. Infusion of the bitter leaves must be drunk by men sleeping with new widows before they have been purified, otherwise it is believed the man's intestines will rot away (Loeb et al., 1956).

Lantana angolensis Molendyke
Rodin 9079, 9240, 9290 (Det. Giess)

Common names: bird's brandy, wildesalie.

Kwanyama: *omahola ovafita* [Kaffir-corn-boiled-in-water-for-herd-boys].

Description: erect shrub 1 m high, leaves ovate to 7 cm long, margins coarse-crenate, upper side dark green, lower side gray-green, minty odor; flowers tubular, bilateral, orchid and white; fruit a spherical black berry-like drupe.

Uses: berry-like fruit eaten by herd boys when away herding cattle.

VITACEAE

Cyphostemma sandersonii (Harvey) Desc.
Rodin 8915 (Det. Giess)

Kwanyama: *omunyangashe*.

Description: prostrate vine, or climbing on shrubs, stems reddish, tendrils at nodes; palmately compound leaves, 3–5 leaflets; fruit forms berries (grapes) in panicles, turning from red to

black, slightly pointed. Not recorded by Merxmüller (1966–72) as occurring in Ovamboland.

Uses: 1. Grapes eaten, although they contain a large seed and not too much flesh. 2. Vines fed to cows just when a calf is due, for easier delivery.

Cissus quadrangularis L.

Rodin 9169

Collected at Ruacana Falls; a distinctive climber with succulent quadrangular 4-winged stems, succulent 3–5 lobed leaves and tendrils. Although unknown by my Kwanyama informants, it is a new record from western-most Ovamboland.

ZYGOPHYLLACEAE

Sisyndite spartea E. Mey.

Loeb 271, 479, 480 (K)

Kwanyama: *okadimeti, oudimeti* (pl.) [little-does-away-with-bad-things-tree].

Description: perennial herbaceous shrub, much-branched, glaucous, glabrous, to 1.5 m high; appears leafless usually because nearly opposite leaves soon deciduous; leaves oval, to 18 or 20 mm long; flowers yellow, 5 petals 3 cm long, sepals ca. 25 mm long, margins with white woolly pubescence; fruit from 5 carpels, which separate to form 5 mericarps, fruit covered with tufts of yellowish stiff hairs. Not reported by Merxmüller (1966–72) as occurring in Ovamboland.

Uses: roots dug up, chewed to settle stomach.

Tribulus terrestris L.

Rodin 9052 (Det. PRE, 1973)

Common names: puncture vine, dubbeltjie-doring, duiweltjies, platdubbeltjie.

Kwanyama: *esosolo* (*Rodin 9052*), *ososholo* (LeRoux, 1971).

Description: prostrate mat-forming annual vine, stems covered with bristly hairs mixed with short white hairs; pinnately compound leaves 5–8 pairs of leaflets, to 16 mm long; flowers bright yellow, 5 petals to 10 mm long, broadly ovate, 5 sepals, 10 stamens; fruit 8–9 mm across, indehiscent, 5 1-chambered mericarps, numerous sharp spines, at least 4 large ones per mericarp.

Uses: 1. Before fruit ripens vines are eaten by goats and cows. 2. Spines injure feet of humans and animals and cause flat tires on bicycles.

Tribulus zeyheri Sond.

Loeb 98 (Det. PRE, 1948)

Common names: puncture vine, devil's thorn, dubbeltjie(doring), platdubbeltjie.

Kwanyama: *ososolo,* a spelling variant for the names of *T. terrestris.*

Description: prostrate mat-forming perennial vine, finely hirsute with larger bristle-like hairs on all vegetative parts; pinnately compound leaves, 4–9 pairs of leaflets, oblique, variable in size and shape; flowers with 5 broadly ovate bright yellow petals 10–20 mm long, 5–10 sepals, 10–20 stamens; fruit 5 carpels, each 1–3-seeded, separating into 5 indehiscent mericarps, each with a number of spines including at least 4–5 long sharp ones.

Uses: 1. Vines eaten by goats when young. 2. Spines injure feet of humans and animals and cause flat tires on bicycles.

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Appendix: KWANYAMA PLANT USES

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
1. Carved wood (*oihongomwa*)			
beer cups (*omaholo*)	*Combretum engleri*		*omulondaxuxua*
	Commiphora africana		*omboo*
	Commiphora angolensis		*omboo*
	Commiphora glaucescens		*omukuku, omboo*
	Diospyros mespiliformis		*omwandi*
wine cups (*omaholo*) smaller	same species as beer cups		
bowls for eating	same species as beer cups		
bowls for curdled milk	same species as beer cups		
bowls for red ochre and fat	all species of *Commiphora*		*omboo*
buckets for butter	all species of *Commiphora*		*omboo*
buckets for milk (*omaholo omasini*) (*eholo lokukanda*, Bruwer, 1961)	all species of *Commiphora*		*omboo*
bellows for blacksmith forge	*Berchemia discolor*		*omuve*
	Pterocarpus angolensis		*omuuva*
	Berchemia discolor		*omuve*
condenser for still	*Croton gratissium*	carved from crotch	*ombango*
dolls	*Baikiaea plurijuga*		*omupapa*
drums	*Ricinodendron rautanenii*		*omunghete*
hoe and axe handles	*Acacia giraffae*		*omuonde*
	Acacia hebeclada		*omutoka*
	Baikiaea plurijuga		*omupapa*
	Colophospermum mopane		*omufyati*
	Dialium engleranum		*omifimba*
	Peltophorum africanum		*omupalala*
	Terminalia sericea	(considered best wood)	*omwoolo*
	Zizyphus mucronata		*omukekete*
household utensils	*Diospyros mespiliformis*		*omwandi*
knife handles and sheaths	*Berchemia discolor*		*omuve*
	Combretum engleri		*omulondaxuxua*
	Dialium engleranum		*omufimba*
	Diospyros lycioïdes		*oshimumu*
	Diospyros mespiliformis		*omwandi*
	Gardenia spatulifolia		*omulavi*

Appendix (Continued)

Categories	Scientific name	Plant part used	Kwanyama plant name
plow shares	*Baikiaea plurijuga*		*omupapa*
snuff boxes	*Baikiaea plurijuga*		*omupapa*
	Berchemia discolor		*omuve*
	Diospyros mespiliformis		*omwandi*
	Ochna pulchra		*omumwe*
snuff box covers	*Lagenaria siceraria*		*exhupa, osikola*
snuff box spoons	*Euclea divinorum*		*omudime*
spoons, stirring sticks	*Combretum apiculatum*	stems	*omunaluko*
	Diospyros mespiliformis	stems	*omwandi*
	Ricinodendron rautanenii	stems	*omunghete*
	Hyphaene ventricosa	petioles	*omulunga*
stamping place (mortar and pestle)	*Baikiaea plurijuga*		*omupapa*
stamping block (mortar)	*Peltophorum angolensis*		*omuuva* (from Taapopi)
	Burkea africana		*omutundungu*
pestle	*Colophospermum mopane*		*omufyati*
sticks to beat cattle	*Mundulea sericea*		*omubangayana*
walking sticks	*Grewia flava*		*omuhonga*
	Spirostachys africana		*omuhongo*
wagon tongues	*Terminalia prunoïdes*		*omunghama*
special utensils			
balance poles to carry calabashes, etc.	*Hyphaene ventricosa*	large petioles	*omulunga*
drinking troughs for cattle	*Hyphaene ventricosa*	hollowed out dead tree trunks	*omulunga*
erect stems for brewing beer	*Hyphaene ventricosa*		*omulunga*
herding stick to keep calves from cows being milked	*Mundulea suberosa*		*omumbangangyana*
toothbrushes	*Albizia anthelmintica*	frayed stem ends	*omuhanguti*
	Diospyros lycioïdes	frayed stem ends	*oshimumu*
	Entandrophragma spicata	frayed stem ends	*omutaku*
	Euclea divinorum	frayed stem ends	*omudime*
	Grewia deserticola	frayed stem ends	*omusheshe*
	Pennisetum typhoïdes	frayed stem ends	*omahangu*
	Saccharum officinarum	frayed stem ends	*omuenge*
	Sorghum caffrorum	frayed stem ends	*olulyavala*
	Indigofera daleoïdes	frayed root ends	*okanakafukwa*
	Tephrosia lupinifolia	frayed root ends	*okanakafukwa*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
2. Fibers			
A. Woven items (*oitunguwomwa*)			
baskets of many sizes, coiled	*Hyphaene ventricosa*	split leaflets	*omulunga*
basket reinforcement on rim	*Combretum parvifolium*	small peeled branches	*onghatanga*
	Combretum engleri	small peeled branches	*omulondaxuxua*
baskets, large granary	*Colophospermum mopane*	small peeled branches	*omufyati*
	Terminalia sericea	small peeled branches	*omwoolo*
B. Braided items			
necklaces, rings for *efundula* (girls puberty rites)	*Hyphaene ventricosa*		*omulunga*
skirts, special for *efundula*	*Hyphaene ventricosa*		*omulunga*
bracelets, belts, necklaces, rings, for bride at wedding	*Combretum zeyheri*		*omushendye*
necklace, belt at baby naming ceremony	*Terminalia sericea*		*omwoolo*
hats for men and women	*Hyphaene ventricosa*		*omulunga*
	Triraphis purpurea		*omunashoke*
	Vetiveria zizanoïdes		unknown
sitting or sleeping mats or placemats	*Hyphaene ventricosa*		*omulunga*
sleeping mats (twilled)	*Hyphaene ventricosa*		*omulunga*
	Phragmites australis		*olumbungu*
C. Twined items			
hats (sometimes)	*Hyphaene ventricosa*		*omulunga*
	Triraphis purpurea		*omunashoke*
	Vetiveria zizanoïdes		unknown
fish traps	*Grewia deserticola*	stems	*omushe*
	Hyphaene ventricosa	leaves, petioles	*omulunga*
D. Non-woven items			
brooms for stamping place	*Aristida junciformis*		*omushoke*
	Hyphaene ventricosa	split leaflets	*omulunga*
filler fibers (cotton) for cleaning pads, in quiver to protect arrow feathers, medical applications	*Gossypium herbaceum*		*osiduduandiba*
sieves for straining wine or beer	*Fimbristylis hispidula*	leaves	*okashede*
	Hyphaene ventricosa	leaves	*omulunga*
	Kyllingia alba	leaves	*ofinde, oshedishomula*
dental floss	*Acacia albida*	bark	unknown
wound sutures	*Ricinus communis*	bark strips	*olumono*
belts for boys	*Terminalia prunoïdes*	bark strips	*omunghama*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
thread for beads	*Acacia arenaria*		*oluiamenjo*
	Acacia sieberiana		*omuyele*
thread for finishing edges of baskets, hats, etc.	*Colophospermum mopane*		*omufyati*
rope, twine, or string—most important for making fences, tying huts	*Colophospermum mopane*	bark	*omufyati*
general usage	*Terminalia sericea*	bark	*omwoolo*
string	*Acacia erubescens*	bark	*okadilanghono*
	Hyphaene ventricosa	leaf fibers, twisted, braided or plaited	*omulunga*
	Sanseveria aethiopica	leaf fibers, twisted, braided or plaited	*omuse*
	Sanseveria pearsonii	leaf fibers, twisted, braided or plaited	*onghushe*
3. Uses of gourds (See also foods, musical instruments, magic)			
carry liquids—milk, water, beer or wine (several shapes)	*Lagenaria siceraria*		*osikola, embao*
churns—large calabash	*Lagenaria siceraria*		*exhupa*
churn frame and handles	*Combretum apiculatum*		*omunaluko*
	Combretum engleri		*omulandaxuxua*
churn fork-support frame	*Peltophorum africanum*		*omupalala*
dippers, long-handled gourd	*Lagenaria siceraria*		*omindo*
household cleanser, a scraper vegetable sponge	*Luffa cylindrica*		*oshiyaaikutu*
resonating chamber for 1-stringed muscial instrument	*Lagenaria siceraria*		*embao*
storage of seeds, dried fruit, etc.	*Lagenaria siceraria*		*exhupa, embao,* or *osikola*
vegetable to cook—warty gourd only	*Lagenaria siceraria*		*oshitila*
4. Construction materials (*oitunguwonwa*)			
huts, round conical roof need upright poles, roof supports	*Acacia erubescens*		*okadilanghono*
	Acacia hebeclada		*omutoka*
	Baikiaea plurijuga		*omupapa*
	Berchemia discolor		*omuve*
	Colophospermum mopane		*omufyati*
	Combretum collinum		*omupupwaheke*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
4. Construction materials, continued			
	Combretum hereoense		*omukadikuku*
	Combretum imberbe		*omukadikuku*
	Combretum zeyheri		*omushendye*
	Diospyros lycioïdes		*oshimumu*
vertical poles	*Hyphaene ventricosa*	petioles	*omulunga*
	Pterocarpus angolensis	petioles	*omuuva*
	Spirostachys africana	petioles	*omuhongo*
	Terminalia sericea	petioles	*omwoolo*
shade, i.e., a cooking place			
pole supports, etc.	*Sorghum caffrorum*		*olulyavala*
covering	*Hyphaene ventricosa*	palm leaves	*omulunga*
fences			
palisade walls of kraal	*Acacia erubescens*		*okadilanghono*
	Acacia hebeclada		*omutoka*
	Baikiaea plurijuga		*omupapa*
	Burkea africana		*omutundungu*
	Colophospermum mopane		*omufyati*
	Combretum apiculatum		*omunaluko*
	Combretum collinum		*omupupwaheke*
	Combretum hereoense		*omukadikuku*
	Combretum imberbe		*omukadikuku*
	Combretum mechowianum		*omupupuwaheke*
	Combretum zeyheri		*omushendye*
	Diospyros lycioïdes		*oshimumu*
	Peltophorum africanum		*omupalala*
	Rhigozum brevispinosum		*omumakani*
	Spirostachys africana		*omuhongo*
	Terminalia prunoïdes		*omunghama*
	Terminalia sericea		*omwoolo*
thorn fences—cut branches for cattle enclosures, gardens	*Acacia hebeclada*		*omutoka*
	Acacia fleckii		*omumanganjaba*
	Acacia giraffae		*omuonde*
	Acacia senegal		*enghono*
	Combretum imberbe		*omukadikuku*
	Maytenus senegalensis		*oshigodwe*
	Rhigozum brevispinosum		*omumakani*
	Zizyphus mucronata		*omukekete*

Appendix (Continued)

Categories	Scientific name	Plant part used	Kwanyama plant name
gate of cattle kraal entrance	*Acacia fleckii*		*omumangandjaba*
forked sticks—2 supporting main entrance to kraal	*Terminalia prunoïdes* (species preferred)		*omunghama*
	Peltophorum africanum (species preferred)		*omupalala*
	Acacia giraffae (species less desirable)		*omuonde*
	Colophospermum mopane (species less desirable)		*omufyati*
cross-log over main entrance	*Euclea divinorum*		*omudime*
sitting place—3 sitting logs (any one species)	*Burkea africana*		*omutundungu*
	Colophospermum mopane		*omufyati*
	Lonchocarpus nelsii		*omupanda*
	Baikiaea plurijuga		*omupapa*
lumber cut in a mill—used in part in buildings for window and door frames and doors, and furniture, etc.	*Dialium engleranum*		*omufimba*
	Guibourtia coleosperma		*omusii*
	Pterocarpus angolensis		*omuuva*
	Pterocarpus angolensis		*omuuva*
furniture, chairs, desks, etc.	*Aristida adscensionis* (most common, best quality)		*oshoke*
thatching grasses	*Aristida gracilor* (most common, best quality)		*oshoke*
	Aristida stipitata (most common, best quality)		*oshoke*
	Panicum trichonode (most common, best quality)		*omukashulwa*
	Phragmites australis (most common, best quality)		*eembungu*
	Phragmites mauritanus		*eembungi*
	Triraphis purpurea (most common, best quality)		*omunashoke*
	Eragrostis pallens (less important species)		*omaoloolo*
	Heteropogon contortus (less important species)		*ohengo jasimbungu*
	Pennisetum typhoïdes (used mostly for shade)		*omahangu*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
4. Construction materials, continued			
	Tricholaena monachne (considered inferior)		*wanenuna*
5. Fuel			
charcoal for blacksmith	*Burkea africana* (best)		*omuntundungu*
	Diospyros mespiliformis (second choice)		*omwandi*
cooking fires (*omungilo*)			
dry wood for cooking	*Acacia tortilis*	stems	*kamutaka*
	Colophospermum mopane	stems	*omufyati*
	Combretum apiculatum	stems	*omunaluko*
	Dichrostachys cinerea	stems	*ongete*
	Hyphaene ventricosa	palm seeds, flower stalks, leaves, petioles	*omalunga*
wet wood for cooking	*Combretum zeyheri*	stems	*omushendye*
for starting fires	*Ozoroa schinzii*		*oshifiku*
sacred fire—always green	*Colophospermum mopane*		*omufyati*
wood never burned (taboo)	*Euclea divinorum*		*omudime*
6. Weapons (*oiluifo*)			
knobkerries, some simple, some elaborately carved	*Acacia giraffae*		*omuonde*
	Combretum albopunctatum		*omulama* (?)
	Colophospermum mopane		*omufyati*
	Croton gratissimus		*ombango*
	Dichrostachys cinerea		*ongete*
	Euclea divinorum		*omudime*
	Terminalia prunoïdes		*omunghama*
for ceremonies by boys	*Berchemia discolor*		*omuve*
bows (See bow strings under fibers)			
for adults	*Acacia mellifera*		*omunghono*
	Acacia ataxacantha		*omunghono, enghono*
	Dichrostachys cinerea		*onghete*
	Hyphaene ventricosa	from petioles	*omulunga*
toys for children	*Acacia ataxacantha*		*omunghongo*
	Terminalia prunoïdes		*omunghama*
	Ricinodendron rautanenii		*omunghete*

Appendix (Continued)

Categories	Scientific name	Plant part used	Kwanyama plant name
arrow shafts			
for adults	*Clerodendrum glabrum*	straight stems	*onululu*
	Grewia deserticola	straight stems	*omushe*
	Grewia falcistipula	straight stems	*omwila*
	Grewia flava	straight stems	*omuhonga*
	Grewia tenax	straight stems	*omuhonga*
	Ochna pulchra	straight stems	*omuwe*
toys for children	*Acacia ataxacantha*	straight stems	*omunghongo*
	Ochna pulchra	straight stems	*omuwe*
	Terminalia prunoïdes	straight stems	*omunghama*
frame to straighten arrows	*Baphia massaiensis*		*ofufe*
cotton fibers in quiver to separate arrows	*Gossypium herbaceum*		*osiduduandiba*
adhesive to hold arrows on shaft	*Ficus petersii*	latex	*omungholyo*
arrowheads (See poisons for arrow poisons)	*Gardenia spatulifolia*	stems	*omulavi*
	Ochna pulchra	stems	*omuwe*
	Vangueria parvifolia	stems	*omumbu*
assegais, shafts	*Diospyros mespiliformis*		*omwandi*
harpoons (for fishing), shaft	*Diospyros mespiliformis*		*omwandi*
twine to recover harpoon	*Colophospermum mopane*	twisted bark	*omufyati*
7. Magic plants			
"King's ointment"—soap	*Espaltes gariepina*		*odivadiva*
another used with lion's fat	*Nidorella resedifolia*		*efindapya*
overcome a taboo	*Gomphocarpus tomentosus*		*etumupya*
taboo and honor (after hunting)	*Combretum zeyheri*		*omushendye*
good luck	*Orthanthera jasminiflora*		*ekoka*
	Leonotis nepetifolia		*otilovalodi*
	Pergularia daemia		*etanoka*
	Rhigozum brevispinosum		*omumakani*
grown in kraal for good luck	*Tinospora fragosa*		*eposha*
wet wood burned for good luck	*Combretum zeyheri*		*omushendye*
good luck charms (women's fishing parties, boys at roundups)	*Colophospermum mopane*		*omufyati*
bad luck, if burned	*Euclea divinorum*		*omulime*
for various ills	*Adansonia digitata*	bark	*omukwa*
for severe illness	*Peltophorum africanum*	fruit	*omupalala*
substitute for dung of hares (which has magic qualities) because hares eat this grass	*Eragrostis lehmanniana*		*ombidangolo*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
7. Magic plants, continued			
domestic tranquility in kraal	*Decabelone barklyi*		*olukato lekadi*
sacred trees in kraals (royal)			
different groups in different areas	*Colophospermum mopane*		*omufyati*
	Commiphora africana		*omboo*
	Peltophorum africanum		*omupalala*
	Terminalia sericea		*omwoolo*
sacred plants			
sacred witch plant—at kraal opening	*Maerua schinzii*		*omupola*
to keep away evil spirits	*Euclea divinorum*		*omudime*
drive away evil spirits by smoking leaves on coals, esp. bad dreams in nobility	*Colophospermum mopane*		*omufyati*
snake repellent, if grown in kraal	*Cassia occidentalis*		*omutiwojoka*
	Chenopodium ambrosioïdes		*santamaria*
	Tinospora fragosa		*eposha*
	Combretum imberbe		*omukadikuku*
	Geigeria schinzii		*ongonyo*
	Justicia matammensis		*omumakani*
	Kleinia longiflora (?)		*oshinanganamwali*
general magic qualities			
good marksmanship charm	*Lactuca* sp.		*etalakeka*
magic fish attractor, if spit on harpoon	*Lagenaria siceraria*		*ongadia* or *oshikola*
plant over buried afterbirth in kraal to keep away evil spirits	*Momordica balsamina*		*onyati*
	Justicia matammensis		*omumakani*
magic removal of poisons when sprinkled in kraal by doctor	*Alectra vogellii*		*onime*
	Aptosimum decumbens		*ekatadiai*
induce death to distant person doctor stabs water-filled gourd	*Clerodendron uncinatum*		*oshiyooseuta*
	Entada arenaria (?)		*ombalandongo*
promote braveness and strength in boys	*Portulaca oleracea*		*oshimhelewene*
detect a murderer, chew branch, rub on face			
improve memory, tea or chew tea from leaves	*Combretum zeyheri*		*omushendye*
	Kleinia longiflora (?)		*oshinanganamwali*
purification ceremony after birth of twins	*Combretum zeyheri*		*omushendye*
prevent body swelling after birth of twins, two plants mixed	*Clerodendrum uncinatum*		*oshiyoseuta*
magic potions			
purification after killing a turkey buzzard	*Gomphocarpus tomentosus*		*etamupya*
purification of wife after death of her husband			
purification of men after battle			
men—drink infusion before sleeping with unpurified new widows			
purification after breaking taboo			

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
purification douche (clay phallus also inserted)	*Borreria* sp.		*okaxupilaunona*
remarriage purification bath for widow	*Euclea divinorum*		*omudime*
pregnant girl killed by abortion thrown into one of these bushes	*Euclea divinorum*		*omudime*
causes death of a man after intercourse	*Peltophorum africanum*		*omupalala*
protective qualities			
for *efundula* (puberty rites)	*Sanseveria pearsonii*	leaf fibers	*ongushe*
necklace around body and neck	*Aloë esculenta*	dried leaves	*endobo*
against men (women chew)	*Ochna pulchra*		*omumwe*
against magic poisons, witch doctor throws them in bush	*Euclea divinorum*		*omudime*
against lightning, on roof	*Gardenia spatulifolia*		*omulavi*
against spirits for warriors	*Dissotis debilis*		*okanautani*
bride's pouch contains powdered dried fruit rind	*Strychnos pungens*		*omupwaka*
tea to promote fertility	*Asparagus virgatus*		*omilu*
bee repellent	*Acacia giraffae*		*omuonde*
hit plant—have a fight	*Rhigozum brevispinosum*		*omumakane*
8. Foods for Ovambos (Kwanyamas)			
A. Cultivated			
native (indigenous) plants			
grains, cooked whole or in porridge			
millet	*Pennisetum albicauda*		*omahangu*
	Pennisetum typhoïdes (most important staple)		*omahangu*
Kaffir corn (milo maize)	*Sorghum caffrorum*		*oilyavala*
vegetables			
green beans	*Vigna unguiculata*		*omakunde*
warty gourds	*Lagenaria siceraria*		*oshitila*
pumpkin	*Cucurbita moschata*		*enyangwa*
raw, eaten by children	*Kedrostis hirtella*		*okatanga kamufifi*
cooked	*Cucumis africanus*		*etanga*
fruit			
some cooked forms, others raw	*Citrullus lanatus*		*etanga lepuputa* and *etanga leliua* etc.
seeds			all five forms identified
watermelons	*Citrullus lanatus*		*efukwa*
groundnut	*Voandzeia subterranea*		*omakunde*
beans, dried to cook	*Vigna unguiculata*		

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
8. Foods for Ovambos, continued			
leaves, potherbs, often dried in cakes			
Ovambo bean	*Vigna unguiculata*		*omakunde*
stems and young leaves			
young shoots cooked	*Pennisetum typhoïdes*		*omahangu*
	Sorghum caffrorum		*olulyavala*
Introduced			
grains			
mealies (maize)	*Zea mays*		*epungu*
vegetables			
white potatoes	*Solanum tuberosum*		*oikahautu*
fruits			
cactus apple	*Opuntia ficus-indica*		*omukaigana*
mulberry	*Morus nigra*		none
guava	*Psidium guava*		*omungwaava*
lime	*Citrus aurantifolia*		*omungongo*
sweet orange	*Citrus sinensis*		
sour orange	*Citrus aurantium*		
tangerine	*Citrus reticulata*		
lemon	*Citrus limon*		
seeds			
peanut	*Arachis hypogaea*		*eembudufukwa*
mealies, raw or cooked on ear	*Zea mays*		*epungu*
roots			
sweet potato, cooked	*Ipomoea batata*		*oshikapa*
manioc, rarely grown	*Manihot esculenta*		*omudika*
leaves, potherbs, boiled	*Ipomoea batata*		*oshikapa*
manioc	*Manihot esculenta*		*omadika*
stem			
sugar cane, chewed	*Saccharum officinarum*		*omuenge*
stem			
sap expressed, boiled for crude sugar	*Saccharum officinarum*		*omuenge*
B. Gathered wild			
leaves, potherbs, extra cooked, dried as "cabbages" (*omavanda*)	*Amaranthus thunbergia*		*ekwakwa*
	Celosia argenteiformis		*eshilalodi*
	Chenopodium ambrosioïdes		*santamaria*
	Cucumis anguria		*elopa*
	Gisekia pharnaceoïdes		*omundjulu*
	Gomphrena celosioïdes		

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
	Gynandropsis gynandra		*ombidi*
	Helichrysum leptolepsis		*oshitendadikwa*
	Hermbstaedia sp.		*eshilalodi*
	Sesbania pachycarpa		*ombudje*
	Sesuvium sessuvioïdes		*omundjulu*
seeds (nuts)			
baobab seeds, raw or ground	*Adansonia digitata*		*omukwa*
seeds, fresh raw, dried cooked	*Dialium engleranum*		*omufimba*
persimmon seeds, raw or cooked	*Diospyros mespiliformis*		*omwandi*
seeds, boiled, cooked in oil	*Guibourtia coleosperma*		*omushii*
manketti nuts, raw or cooked	*Ricinodendron rautanenii*		*omunghete*
marula nuts, raw or cooked	*Sclerocarya caffra*		*omwoongo*
seeds, raw	*Strychnos pungens*		*ompuwaka*
flowers raw or cooked as with potherbs, also may be dried	*Sesbania pachycarpa*		*ombudje*
edible gums	*Aloë esculenta*		*endobo*
	Aloë zebrina		*ekundu*
	Acacia giraffae	bark of stems	*omuonde*
	Acacia hebeclada	bark of stems	*omutoka*
	Burkea africana	bark of stems	*omutundungu*
	Combretum imberbe	bark of stems	*omukadikuku*
	Terinalia sericea	bark of stems	*omwoolo*
corms	*Aponogeton rehmannii*		*oghnapa* (Mbalantu)
	Cyperaceae (genus undetermined)		*oheva*
	Ferraria glutinosa		*onyengulushe*
	Isoëtes kersii		*endavo*
	Lapeirousia coerulea		*onyengulushe*
	Lapeirousia cyanescens		*onyengulushe*
	Lapeirousia vaupeliana		*onyengulushe*
rhizomes	*Nymphaea capensis*		*edo*
roots, fleshy	*Ceropegia nilotica*		*kombrua*
	Commiphora africana		*omboo*
	Ipomoea adenioïdes		*okanakamudesha*
	Ipomoea verbascoïdes		*engamukuiju*
	Vigna lobatifolia		*embilio*
	Grewia falcistipula		*omwila*
eaten mostly by Bushmen			
fruits	*Acacia mellifera*	pods	*okadilunghono*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
8. Foods for Ovambos, continued			
eaten mostly by Bushmen	*Acanthosicyos naudinianus*	bitter pulp	*okatangakamufifi*
	Adansonia digitata	powdery pulp in capsule	*omukwa*
	Antidesma venosum	berries	*ofufe*
	Asclepiadaceae (genus undetermined)	pods	*nadinga*
	Berchemia discolor	berry	*omuve*
	Carissa edulis	berry	*ekisinananga lokumdonga*
grapes	*Cyphostemma sandersonii*		*omunyangashe*
persimmon	*Diospyros chamaethamnus*		*omukokofi*
	Diospyros lycioïdes		*oshimumu*
	Diospyros mespiliformis		*omwandi*
	Euclea divinorum		*omudime*
fig	*Ficus petersii*		*omungholyo*
	Ficus sycomorus		*omukwiyu*
	Grewia avellana		*omukopakopa*
	Grewia deserticola		*omushe*
	Grewia falcistipula		*omwila*
	Grewia flava		*omuhonga*
	Grewia flavescens		*omukopakopa*
	Grewia retrinervis		*omuse*
	Grewia tenax		*omuhonga*
	Hyphaene ventricosa	outer fibrous cover eaten	*omulunga*
	Lantana angolensis	berries	*omahola*
	Monechma divaricatum	berries	*okaliamufita*
	Orthanthera jasminiflora	pods	*ekoka*
date	*Phoenix reclinata*		*omulanga wangolo*
manketti	*Ricinodendron rautanenii*		*omunghete*
	Salacia luebbertii		*okandongodongo*
marula	*Sclerocarya caffra*		*omwoongo*
	Solanum nigrum	ripe berries only	*ndemukolenghula*
fresh only, never dried	*Strychnos cocculoïdes*		*omuuni*
fresh only, never dried	*Strychnos pungens*		*omupwaka*
	Vangueria infausta		*omubu*
	Vangueria parvifolia		*omubu*
	Ximenia americana var. *microphylla*		*omupeke oshikukulu*
	Ximenia caffra var. *caffra*		*oshipeke oshimbyu*
	Ximenia caffra var. *natalensis*		*oshipeke oshinenepeke*
raw, rather bitter	*Zizyphus mucronata*		*omukekete*

Appendix (Continued)

Categories	Scientific name	Plant part used	Kwanyama plant name
pods added to milk for flavor	*Dialium englerianum*		*omufimba*
buds—terminal bud of palm, "cabbage," now illegal	*Hyphaene ventricosa*		*omulunga*
stems and leaves	*Euphorbia forskalii*		*okaxungu*
fungi	mushrooms (undetermined)		*okaklahambo*
			okaxwilili
			oova
C. Favorite cooked foods			
porridges			
mixed with millet	*Sorghum caffrorum*		*olulyavala*
accompanying other foods	*Pennisetum typhoïdes*		*omahangu*
cattle returning ceremonies, taken with milk (*oshinangua*)	*Pennisetum typhoïdes*		*omahangu*
not a favorite porridge	*Zea mays*		*epungu*
cakes fried in oil (*onghundu*)	*Pennisetum typhoïdes*		*omahangu*
cakes in hot ashes (*omungome*)	*Pennisetum typhoïdes*		*omahangu*
dumplings boiled in water (*omungome*)	*Pennisetum typhoïdes*		*omahangu*
whole grain boiled with marula nuts (*omahola*)	*Pennisetum typhoïdes*		*omahangu*
whole grain boiled	*Sorghum caffrorum*		*olulyavala*
"*eta-pati,*" potherbs cooked together	*Mollugo cerviana*		*okaxungu*
	Euphorbia forskalii		*okaxungu*
special food mixed with potherbs	*Sesuvium sesuvioïdes*		*omundjulu*
D. Favorite uncooked foods			
millet flour mixed with buttermilk (*omubololo*)	*Pennisetum typhoïdes*		*omahangu*
E. Food processes			
butter production increased	*Euphorbia montieri*		*omupindinanguali*
	Limeum viscosum		
curdling milk (rennin-like)	*Boscia albitruncata*	crushed roots	*omunghudi*
	Nymania capensis		*omunghudi*
cooked with beef, if animal died of anthrax	*Gomphocarpus tomentosus*		*etamupya*
mixture cooked (*ombidi*)	*Vigna unguiculata*	leaves	*omakunde*
	Sclerocarya africana	seeds (nuts)	*ongongo*
separating oil from plants using the boiling process, add	*Euphorbia forskalii*		*okaxungu*
F. Cooking oils			
stamped seeds	*Sclerocarya caffra*		*omwoongo*
	Citrullus lanatus		*domaliua*
	Ricinodendron rautanenii		*omunghete*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
8. Foods for Ovambos, continued			
cooked and stamped seeds	*Guibourtia coleosperma*		*omushii*
boiled from fruits by Bushmen	*Ochna pulchra*		*omumuwe*
G. Seasonings			
in marula wine and potherbs	*Combretum psidioïdes*		*omalo*
cooked with meat, fish	*Ocimum canum*		*endjikaui*
hot spice—chili pepper used by only a few	*Capsicum annuum*		*ondungu*
	Capsicum frutescens		*ondungu*
H. Nectar of flowers, sucked out by children	*Bauhinia macrantha*		*omutwanghuta*
	Harpogophytum zeyheri		*elyata*
9. Food for animals			
birds	*Echinochloa colonum*		*ombode*
bucks	*Ipomoea verbascoïdes*	vines	*engamukuiju*
	Ficus petersii	fruit	*omungholyo*
	Ficus sycomorus	fruit	*omukwiyu*
cattle and goats (also a few donkeys)			
grasses	*Aristida meridionalis*		*omushoke*
	Cynodon dactylon		*onguena*
	Digitaria milanjiana		
	Dinebra retroflexa		*okaidi-kokananga*
	Eragrostis cilianensis		*ombidangolo*
	Eragrostis cylindriflora		*ombidangolo*
	Eragrostis lehmanniana		*ombidangolo*
	Eragrostis rotifer		*olpunga*
	Eragrostis superba		*ombidangolo*
	Eragrostis trichophora		*omahangu*
	Pennisetum typhoïdes		*oshinamume*
	Schmidtia kalahariensis		*olulyavala*
	Sorghum caffrorum		
non-grasses			
foliage, young branches	*Acacia giraffae*		*omuonde*
	Albizia versicolor		*omusheshe*
	Asparagus virgatus		*omila*
	Baphia massaiensis		*ofufe*
	Bergia prostrata		*okupata*
	Cleome rubella		*embodi*
	Colophospermum mopane		*omufyati*
	Commiphora glaucescens		*omukuku*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
	Crotolaria podocarpa		
	Croton gratissimum		*ombango, omumakani*
	Grewia tenax		*omuhonga*
	Kleinia longiflora (?)		*oshinanganamuali*
	Maerua schinzii		*omupola*
	Monechma divaricatum		*okalimufita*
	Nidorella resedifolia		*efindapya*
	Polycarpaea corymbosa		*okapembe*
	Scirpus muricinux		
fruit only on ground	*Ficus petersii*		*omungholyo*
	Ficus sycomorus		*omukwiyu*
leaves only	*Bauhinia macrantha*		*omutwanghuta*
	Scilla rautanenii		*enyanga*
	Sida hoepfneri		*okanangola*
	Tephrosia burchellii		
	Trachyandra arvensis		*enjanga*
twigs broken by men (parasite)	*Tapinanthus olaefolius*		*oshilunda*
vine, when young	*Tribulus terrestris*		*ososolo*
	Tribulus zeyheri		*ososolo*
harvested grasses from cultivated fields, kept dry in kraal	*Tricholaena monachne*		*wanenuna*
harvested, fed fresh in cattle enclosure	*Urochloa brachyura*		*epele*
goats eat, but cattle and horses die from these	*Datura innoxia*		*emumu*
	Datura metel		*enumu*
	Ennaepogon scoparius		*ongai*
	Indigofera astragalina		*okambadanga*
	Spirostachys africana		*omuhongo*
	Swartzia madagascariensis		*omumonga*
only goats eat these	*Acacia tortilis*		*kamutaka*
	Asparagus aspergillus		*okalili kondume*
	Baikiaea plurijuga		*omupapa*
	Crinum crassicaula		*omanyanga*
	Crinum rautanenianum		*omanyanga*
	Crotolaria podocarpa		
	Heliotropium ovalifolium		*embodi*
	Nerium duparquetiana		*omanyanga*
	Nidorella resedifolia		*efindapya*
hare	*Eragrostis lehmannia*		*ombidangolo*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
9. Food for animals, continued			
horses (most of grasses eaten by cattle)	*Pennisetum typhoïdes*	bran	*omahangu*
pigs	*Citrullus lanatus*	leaves, extra fruit	*domaliua*
	other Cucurbitaceae fruits		
	Giesikia pharneceoïdes		*omundjulu*
	Portulaca oleracea		*oshimhelewene*
	Sesuvium sesuvioïdes		*omundjulu*
turtles	*Commelina africana*		*elamba*
	Commelina forskalaei		*elamba*
10. Beverages			
A. Beer (*omalodu*), the most important beverage			
Kaffir beer with fine flour added	*Pennisetum typhoïdes*		*omahangu*
	Sorghum caffrorum		*olulyavala*
rough beer (*oshikundu*) without fine flour added	*Pennisetum typhoïdes*		*omahangu*
	Sorghum caffrorum		*olulyavala*
	Zea mays		*epengu*
bark added to flavor beer	*Burkea africana*		*omutundungu*
B. Wine (*omavinju*) a fermented beverage from fresh or dried fruits	*Berchemia discolor*		*omuve*
	Diospyros lycioïdes		*oshimumu*
	Diospyros mespiliformis		*omwandi*
	Euclea divinorum		*omudime*
	Ficus petersii		*omungholyo*
	Ficus sycomorus		*omukwiyu*
	Grewia avellana		*omukopakopa*
	Grewia deserticola		*omushe*
	Grewia falcistipula		*omwila*
	Grewia flava		*omuhonga*
using fibrous covering	*Hyphaene ventricosa*		*omulunga*
marula—most popular wine	*Sclerocarya caffra*		*omuongo*
	Strychnos cocculoïdes		*omuni*
	Strychnos pungens		*omupwaka*
	Vangueria infausta		*omubu*
	Vangueria parvifolia		*omumbu*
	Zizyphus mucronata		*omukekete*
crushed bark for special flavor	*Burkea africana*		*omutundungu*

Appendix (Continued)

Categories	Scientific name	Plant part used	Kwanyama plant name
C. Brandy (*olambika*) fermented as for wine, then distilled to make a powerful alcoholic beverage, used occasionally (made from almost all fruits used in wine, plus fruits of)	*Pseudolachnostylis dekintii*		*omuliambabi*
D. Palm wine or "toddy" made from fermented sap obtained from flower bud, or from the trunk (now illegal, as it kills tree to cut terminal bud out)	*Hyphaene ventricosa*		*omalunga*
E. Tea leaves or twigs boiled in water	*Hemizygia bracteosa*		*oshiva*
	Ocimum canum		*endjikaui*
drunk by pregnant women to keep cool	*Lactuca* sp.		*etalakeka*
F. Unfermented cool drinks (*oshinua*) fruit juice, sugar, water			
lime	*Citrus aurantifolia*		*omungongo*
sour orange	*Citrus aurantium*		
lemon	*Citrus limon*		
tangerine	*Citrus reticulata*		
sweet orange	*Citrus sinensis*		
marula	*Sclerocarya caffra*		*omuongo*
cut tree for water-like sap	*Commiphora glaucescens*		*omukuku*
11. Poisons and irritants recognized			
A. General	*Abrus precatorius*	seeds if chewed	*omukene*
	Datura innoxia	all parts	*emumu*
	Datura metel	all parts	*emumu*
	Dipcadi bakeranum	bulbs, leaves	*yanga*
	Entandrophragma spicatum	seeds	*omataku*
	Erythrophleum africanum	gum	*omupako*
	Gloriosa virescens	most parts	*omupilu*
	Guibourtia coleosperma	gum	*omuuti*
	Momordica balsamina	fruit	*onyati*
	Peltophorum africanum	roots	*omupalala*
	Ricinus communis	all parts esp. seeds	*olumono*
	Spirostachys africana	all parts	*omukongo*
	Swartzia madagascarensis	sap	*omunamonga*
	toadstool fungi (genus undetermined)	whole plant	*ege*
	Trachyandra arvensis	bulb	*enyanga*
	Ximenia americana	fruit	*oshipeke oshikukula*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
11. Poisons and irritants recognized, continued			
B. Enemas (also oral) causing death to babies	*Gardenia spatulifolia*		*omulavi*
	Ricinodendron rautanenii		*omunghete*
	Spirostachys africana		*omuhongo*
C. Fish poisons—crushed, put in ponds to stun fish	*Spirostachys africana*		*omuhongo*
D. External irritants			
stinging hairs	*Tragia okanyua*		*okalilifa*
seeds in nose and ear	*Abrus precatorius*		*omukene*
seeds in bronchi	*Berchemia discolor*		*omuve*
barbed fruits caught in clothes or fur	*Achyranthes sicula*		*oshikanyata*
	Pupalia papacea		*oshiyooseuta*
	Triumfetta pentandra		*nanghanjata*
eye irritant	*Adenium boehmianum*	latex	*oudiyo*
	Spirostachys africanus		*omuhongo*
arrow poisons	*Adenium boehmianum*		*oudiyo*
	Euphorbia striata		
	Spirostachys africana		*omuhongo*
E. Prevent or neutralize poisons			
powdered bark in food	*Terminalia sericea*		*omwoolo*
12. Cosmetics (*oidimba*)			
body cleanser (*oyeleki*)			
coarse bran siftings (*onghundu*)	*Pennisetum typhoïdes*		*omahangu*
body powders	*Croton gratissimus*	stamped flower	*ombango*
	lichen (genus undetermined)	stamped thallus	
boiled	*Hemizygia bracteosa*	stamped flowers	*oshive*
deodorant			
mixed with red ochre, minty odor	*Ocimum simile*	leaves	*embody lomomadi*
applied underarm	*Sphaeranthus* sp.	leaves	*inayolutope*
soaps—foaming in water	*Sesbania microphylla*	stamped seeds	*ombudjembudje*
red ochre, pigment added to oil, red from stamped heartwood	*Pterocarpus angolensis*	roots	*omuuva*
oil for red ochre mixture	*Acacia giraffae*	pounded seeds	*omuonde*
	Citrullus ecirrhosus	pounded seeds	*ennuua*
	Citrullus lanatus	pounded seeds	*domaliua*
	Entandrophragma spicatum	pounded seeds	*omutaku*
	Guibourtia coleosperma	pounded seeds	*omushii*
	Lagenaria siceraria	pounded seeds	*exhupa*
	Ricinus communis	pounded seeds	*olumono*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
	Ricinodendron ratanenii	pounded seeds	*omunghete*
	Sclerocarya caffra	pounded seeds	*omwoongo*
	Sphaeranthus sp.	pounded seeds	*inayolutope*
	Ximenia americana	pounded seeds	*oshipeke oshikukulu*
	Ximenia americana var. *microphylla*	pounded seeds	*omupeke oshikukulu*
	Ximenia caffra var. *caffra*	pounded seeds	*oshipeke oshimbyu*
	Ximenia caffra var. *natalensis*	pounded seeds	*oshipeke oshinenepeke*
cosmetic cups (holding red ochre oil or butter mixtures)			
hard fruit shell	*Strychnos cocculoïdes*		*omunya*
	Strychnos pungens		*omupwaka*
carved wooden bowls	*Commiphora africana* and other species		*omboo*
hair for debutante	*Hyphaene ventricosa*	palm leaf edges	*omulunga*
false hair dyed	*Hyphaene ventricosa*	shredded palm leaflets	*omulunga*
13. Medicines (*omiti*)			
A. Anthelmintic, expels worms	*Albizia anthelmintica*		*omuhanguti*
	Albizia versicolor		*omusheshe*
B. Anthrax, poultice on boils	*Tinospora fragosa*		*eposha*
C. Backache, belt to prevent	*Orthanthera jasminiflora*		*ekoka*
infusion	*Tapinanthus oleaefolius*		*oshilunda*
tea from roots	*Securidaca longipedunculata*		*omutihongobe*
D. Bee sting	*Acrotome inflata*		*etwelakuku*
	Rhus tenuinervis		*omupombo*
E. Blindness (temporary)			
cause	*Spirostachys africana*	sap	*omuhongo*
relieved by	sour milk		
F. Bone disease of extremities			
in water	*Strychnos pungens*	roots	*omupwaka*
G. Burns			
juice	*Aloë esculenta*	leaf	*endobo*
crushed	*Corchorus tridens*	leaves	*okalyaoipute*
H. Colds			
tea	*Acacia arenaria*	roots	*omuliamenje*
	Blumea gariepina		*edimba lekadi*
wood smoke inhaled	*Gardenia spatulifolia*		*omulavi*
	Pluchea leubnitziae		*edimba lendume*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
13. Medicines (*omiti*), continued			
I. Chest pains, including lungs			
juice	*Abutilon angulatum*	roots	*ehati*
chewed	*Cassia occidentalis*	roots	*omutiwojoka*
	Acacia arenaria		*omuliamenje*
J. Coughs	*Cassia occidentalis*	roots	*omutiwojoka*
chewed	*Combretum mechowianum*	roots	*omupupuwaheke*
	Hermannia quartiniana		*ekatadidi*
tea	*Limeum fenestratum*	leaf and stems	*oluide*
chewed	*Philostigma thonningii*	bark	*omutuutuu*
chewed, crushed in water	*Solanum delagoense*	roots, fruits	*onlulu*
	Solanum sp.		possibly *onolulu*
K. Cuts and wounds	*Acacia giraffae*		*omuonde*
juice	*Aloë esculenta*	leaf	*endobo*
infusion	*Aptosimum decumbens*	leaf	*ekatadiai*
infusion	*Aptosimum* sp.	leaf	*oshikanda shefuma*
	Bergia decumbens		*oshiveta*
crushed	*Blechnum punctulatum*	fronds, rhizomes	*osiveta*
	Colophospermum mopane	gum on stems	*omufyati*
chewed	*Corchorus tridens*	leaves	*okalyaoipute*
infusion	*Melhania acuminata*	leaves stamped	*ohomo*
	Pergularia daemia		*etanoka*
crushed	*Plumbago zeylanica* (?)	leaves, stems stamped	*okadimeti*
for poisoned arrow wounds	*Solanum delagoense*	fruits	*onululu*
	Grewia avellana		*omukopakopa*
	Grewia deserticola		*omushe*
	Grewia flava		*omukopakopa*
	Grewia retrinervis		*omuse*
L. Diarrhea and dysentery, to control	*Bergia prostrata*	whole plant or just roots	*okapapa, onumakani*
	Otoptera burchellii		*olukaka*
tea	*Securidaca longipedunculata*	stamped roots	*omutiwongobe*
tea	*Zizyphus mucronata*	leaves	*omukekete*
esp. for children	*Lactuca* sp.		*etalakeka*
M. Douches, infusions	*Borreria* sp.		*okaxupilaunona*
	Orthanthera jasminiflora		*ekoka*
N. Earache	*Kleinia longiflora* (?)		*oshinanganamauli*
O. Emetic, to cause vomiting after poisoning			
P. Enemas, administered with a dipper gourd (See poisons for poisonous enemas)			

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
general use	*Laggera alata*		*okapembe*
given to epileptic children	*Aptosimum* sp.		*oshikanda shefuma*
	Glinus dictamnoïdes		*namufyaoli*
	Oxygonum alatum		*oshikanda*
for fever in children	*Alectra vogellii*		*onime*
	Buchnera sp.		*onime*
for stomachache	*Borreria* sp.	whole plant	*okaxupilaunona*
	Borreria squarosa	leaves	*etelakuku*
	Clerodendron uncinatum	roots	*oshioshita*
	Hermannia guerkeana	leaves	*ekatadidi*
	Laggera stenoptera	whole plant	*okapembe*
	Polycarpaea corymbosa	whole plant	*okapembe*
	Terminalia sericea		*omwoolo*
for menstrual cramps	*Vetiveria nigritana*		*enenge*
for constipation and gonorrhea			
Q. Epilepsy (See enemas)			
R. Eye diseases (Also see veneral diseases)			
	Datura metel		*emumu*
	Erlangea schinzii		
an eyewash for beetle irritant	*Grewia deserticola* (also milk)		*omushe*
	Maytenus senegalensis		*oshingodwe*
	Marlothia spartioïdes		*oluweti*
	Pergularia daemia		*okanonga, etanoka*
	Waltheria indica		*oshihakulamesho*
	Zizyphus mucronata		*omukekete*
S. Fevers (including malaria)			
enema	*Alectra vogellii*		*onime*
enema	*Buchnera* sp.		*onime*
esp. for malaria	*Dicoma tomentosa*		*okalupulupu*
esp. for children	*Erlangea misera*		*ombishu*
into children's ears	*Kalanchoë rotundifolia*		
	Peuchuel-Loeschea leubitnitzae		*edimba lendume*
	Zizyphus mucronata	leaves	*omukekete*
T. Headache, infusion	*Berchemia discolor*	leaf	*omuve*
	Erythrophleum africanum	leaves	*omupako*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
13. Medicines (*omiti*), continued			
inhaled	*Jacquemontia tamnifolia*	steam leaves	*okashila*
	Maerua schinzii		*omupola*
inhaled	*Merremia tridentata*	steam leaves	*okatangaela*
smelled	*Nymania capensis*	leaves stamped	*omunghudi*
U. Laxative (purgative)	*Albizia versicolor*		*omusheshe*
	Euphorbia montieri		*omupindinanguali*
can cause death	*Ricinus communis*		*olumono*
	Securidaca longipedunculata		*omutihongobe*
V. Legache, smoke on leg	*Petalidium* sp.		*ohomo*
W. Leg swollen (or arms)	*Aloë esculenta*		*endobo*
	Decabelone barklyi		*olukato lekadi*
	Heliotropium ciliatum		*omuyaumuki*
	Ricinus communis		*olumono*
X. Liver pain, chewed	*Cassia occidentalis*	roots	*omutiwojoka*
Y. Menstrual cramps	*Glinus dictamnoïdes*		*namufyaoli*
burned, sit over smoke	*Kyllingia alba*	roots	*oshedishomula*
	Terminalia sericea		*omwoolo*
Z. Mental disturbance (violent), tea	*Datura innoxia*	roots	*enumu*
AA. Nosebleed	*Lophiocarpus tenuissimus*		*omukonati*
infusion, external	*Plumbago zeylanica* (?)	root	*okadimeti*
	Sesuvium sesuvioïdes		*omundjulu*
BB. Postpartum			
increase lactation	*Cucumis africanus*		*etanga*
assist recovery	*Cyperus sphaerospermus*	leaves	*ofinde*
	Kyllingia alba	roots	*ofinde*
tea to expel any remaining afterbirth	*Rynchosia nervosa*		*inayembo*
	Sida hoepfneri		*okanangola*
CC. Pregnancy			
tea just before birth	*Cassia italica*		*odiva*
tea to "keep cool"	*Lactuca* sp.		*etalakeka*
DD. Promote fertility, tea	*Asparagus virgatus*		*omilu*
EE. Rabies or mad dog (distemper?)	*Baikiaea plurijuga*	gum	*omupapa*
	Cordia gharaf	fruit	*omukuyumbwa*
	Dissotis debilis	root	*ongonyo-ile*
	Geigeria schinzii		*ongonyo*
	Selago sp.		*olune*
	Zizyphus mucronata		*omukekete*
FF. Rheumatism	Ascelpiadaceae (genus undetermined)		*nadinga*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
GG. Skin irritations (including rashes, measles, small pox, scarlet fever)	*Clerodendrum glabrum*		*omululu*
	Plumbago zeylanica		*okadimeti*
	Salvadora persica		*enghodu*
	Sesuvium sessuvioïdes		*omundjulu*
HH. Snakebite remedies	*Acacia mellifera*		*okadilanghono*
	Aptosimum sp.		*oshikanda shefuma*
II. Styptics (to stop bleeding)	*Oxygonum alatum*		*oshikanda*
bleeding hymen and for partial circumcision	*Blechnum punctulatum*		*oshveta*
JJ. Stomachache, tea	*Ricinus communis*		*olumono*
biting	*Acrotome inflata*		*etwelakuku*
tea	*Albizia anthelmintica*		*omuhanguti*
tea	*Aptosimum decumbens*	roots	*ekatadiai*
enema in hot water	*Asparagus africanus*	leaves and twigs	*okalila konghadi*
tea	*Asparagus aspergillus*	leaves and twigs	*okalili kondume*
in water	*Borreria squarosa*		*etwelakuku*
tea	*Borreria* sp.	leaves and stems	*okaxupilaunona*
enema, infusion	*Capsicum anuum*	fruit	*ondungu*
	Cassia italica		*odiva*
to relieve vomiting, children	*Clerodendrum uncinatum*	root	*oshioshita*
enema, infusion	*Combretum imberbe*	roots	*omukadikuku*
	Dicoma tomentosa		*okalupulupu*
stop vomiting	*Erlangea misera*		*ombishu*
tea, by women	*Hermannia guerkeana*	leaf	*ekatadidi*
tea	*Hirpicium gorterioïdes*		*ongongo*
tea	*Indigofera flavicans*	roots	*oshiteyatemo*
	Kyllingia alba	roots and stems	*oshedishomula*
tea	*Lactuca* sp.	leaves and stems	*etalakeka*
	Leucas martinicensis	leaves and stems	*okatendenia*
tea, esp. children	*Leucas sexdentata*		*okatendipya*
	Limeum viscosum	leaves and stems	
chewed	*Ozoroa schinzii*		*oshifiku*
tea	*Oxygonum alatum*		*oshikanda*
KK. Swelling of body or body parts	*Pseudolachnostylis maprouneifolia*		*omuliambabi*
	Sisyndite spartea	roots	*okadimeti*
	Solanum delagoense	leaves	*onululu*
	Acacia giraffae		*omuende*
	Aloe esculenta	roots stamped	

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
13. Medicines (*omiti*), continued			
when due to malnutrition, cook in oil and eat	*Pennisetum typhoïdes*	whole young plant	*omahangu*
to cure dropsy (?)	*Portulaca oleracea*		*oshimhelewene*
boiled (poisonous?)	*Ricinus communis*	leaves	*olumono*
LL. Tetanus, relaxes children	*Geigeria schinzii*		*ongonyo*
MM. Toothache	*Euphorbia montieri*	latex in plant	*omupindinanguali*
NN. Tumors	*Heliotropium supinum*		*ohanauni*
OO. Vaginal treatment	*Kyllingia alba*		*oshedishomula*
PP. Venereal diseases			
for syphilis and gonorrhea	*Gomphocarpus tomentosus*		*etamupya*
	Securidaca longipedunculata		*omutihongobe*
for gonorrhea			
infusion as an enema	*Citrullus naudinianus*		*okatangakamufifi*
enema and orally	*Dissotis debilis*		*ongonyo-lxupi*
eye drops, and tea as a diuretic	*Helenius spartioïdes*	leaves, roots	*oluuyeti*
	Marlothia spartioïdes	roots	*oluweti*
enema	*Vetiveria nigritana*		*enenge*
for syphilis			
dried plant	*Corchorus tridens*		*okalyaoipute*
	Espaltes gariepina (?)		*odivadiva*
QQ. Weaning a baby, extract on nipples	*Aloë esculenta*	leaf	*endobo*
RR. General (specific use unknown)	*Mundulea sericea*		*omubanganyana*
14. Veterinary medicine			
anthrax, prevention in cattle	*Maerua juncea*		*ondjaiya*
	Tinospora fragosa		*eposa*
fly maggot repellent	*Peltophorum africanum*		*omupalala*
infected eyes, cattle and goats	*Ximenia americana*		*oshipeke oshikukulu*
mad dogs (distemper?)	*Euphorbia montieri*		*omupindinanguali*
pulmonary diseases of cattle	*Datura metel*		*emumu*
	Gardenia spathulifolia		*omulavi*
	Grewia flava		*omuhonga*
	Grewia tenax		*omuhonga*
protection against rabies in dogs	*Selago* sp.		*olune*
fed to cows for easier delivery	*Cyphostemma sandersonii*		*omunyangashe*
15. Ceremonies (*onghedi*)			
annointing of king (formerly) (*okafetahamba*)	*Nidorella resedifolia*		*efindapya*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
beginning of war ceremony, men march through	*Colophospermum mopane*	split sapling	*omufyati*
protection of warrior who killed enemies, to prevent ghosts from haunting him	*Dissotis phaeotricha*		*okanautoni*
bride's braided rings, bracelets, necklaces and belts	*Combretum zeyheri*		*omushendye*
wedding whistle (pagan and Christian weddings)	*Colophospermum mopane*	leaf	*omufyati*
purification sprinkling of all entering kraal after birth of twins	*Clerodendrum uncinatum*		*oshioshita*
torches for night ceremonies	*Spirostachys africana*		*omuhongo*
first meal (porridge) after cattle brought back from outposts	*Pennisetum typhoïdes*		*omahangu*
naming ceremony of baby, belt, necklace	*Terminalia sericea*		*omwoolo*
new kraal occupation ceremony, plants walked on	*Aloë esculenta*		*endobo*
	Colophospermum mopane		*omufyati*
	Pavetta zeyheri		*oshihone*
	Kleinia longiflora (?)		*oshinanganamwali*
girls' puberty rites (*efundula*)			
hair plume	*Blechnum punctulatum*		*osiveta*
decoration for hair	*Diospyros mespiliformis*	seed	*omwandi*
mastic to hold *omwandi* seeds in hair	*Berchemia discolor*	macerated fruit	*omuve*
skirts, protective armor	*Sanseveria pearsonii*	massed leaf fibers	*ongushe*
leaves to shape horns on hairdo	*Hyphaene ventricosa*		*omulunga*
quill-like ornaments and necklaces as protective armor	*Aloë esculenta*	leaves	*endobo*
braided false hair, finely cut, dyed black	*Hyphaene ventricosa*	leaves	*omulunga*
beads, smeared with red ochre berries	*Jasminum fluminense*		*oshihamulende*
stick used by boys in bundling ceremonies to awaken erotic spirits in girls	*Securidaca longipedunculata*		*omutihongobe*
16. Dyes (*oifumikwa*)			
brown, permanent principal dye for baskets	*Berchemia discolor*	bark	*omuve*
for baskets (red at first)	*Pterocarpus angolensis*	hardwood root	*omuuva*
orange, not permanent	*Berchemia discolor*	fruit	*omuve*
purple stain, not permanent	*Euclea divinorum*	fruits	*omudime*
red, for traditional red ochre, mixed with butter or vegetable oils for skin, hair and leather aprons of women	*Baphia massaiensis*		*ofufe*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
16. Dyes, continued			
yellow, using Kaffir corn for mordant	*Burkea africana*		*omutundungu*
	Ximenia americana	mashed fruit	*oshikukulu*
	Elephantorrhiza suffruticosa		*omubalandango*
	Entada abyssinica		*omubalandongo*
	Indigofera arrecta		*okalambananghole*
	Pterocarpus angolensis	(most highly preferred)	*omuuva*
17. Musical instruments			
drums	*Ricinodendron rautanenii*	hollowed stems	*omunghete*
flute	*Phragmites australis*	canes	*eembungu*
musical bow (*okambulumbumbua*)			
resonating box, gourd	*Lagenaria siceraria*		*oshikola* or *embao*
stick to play it	*Eragrostis pallens*		*omaoloolo*
Ovambo piano, *sanza*, base	*Pterocarpus angolensis*		*omuuva*
18. Narcotics			
tobacco for pipe smoking	*Nicotiana tabacum*		*omakaya*
snuff, a mixture of			
pulverized tobacco	*Nicotiana tabacum*		*omakaya*
ashes	*Entandrophragma spicatum*	fruit axis	*omataku*
dagga, or hemp (marijuana)	*Cannabis sativa*		*dagga*
false *dagga*	*Leonotis nepetifolia*		*otilovalodi*
19. Toys (Also see carved wood, weapons)			
beads, toys for children	*Ozoroa schinzii*	seeds	*oshifiku*
	Acanthosicyos naudinianus	seeds	*ikatangakamufifi*

APPENDIX (Continued)

CATEGORIES	SCIENTIFIC NAME	PLANT PART USED	KWANYAMA PLANT NAME
fragrant beads	*Vitiveria nigritana*	stem sections	*enenge*
game for boys, imitate cattle raiding	*Euclea divinorum*		*omudime*
dolls for girls	*Hyphaene ventricosa*	fused twin seeds	*omulunga*
20. Miscellaneous			
adhesive	*Diospyros mespiliformis*	gum	*omwandi*
bird lime (for trapping), sticks to birds feet like glue	*Tapinanthus olaefolius*	mashed fruit	*oshilunda*
fruit punctures cause infection	*Tribulus terrestris*		*ososolo*
	Tribulus zeyheri		*ososolo*
fat to polish iron (guns)	*Ochna pulchra*	fruit	*omuwe*
	Dicerocaryum zanguerbarium		*elyata*
catch and tear mouth of livestock	*Harpogophytum zeyheri*	hooked fruits	*elytra*
prevents erection of penis	*Striga hermonthica*		*onime*
leather tanning (contain tannic acid)	*Hibiscus* sp.		*efila*
	Pavonia hirsuta		*efila*
leather softening by oil	*Sida cordifolia*		*efila*
	Ximenia americana	stamped seeds	*oshipeke oshikukula*
	Ximenia americana var. *microphylla*	stamped seeds	*oshipeke oshikukulu*
	Ximenia caffra var. *caffra*	stamped seeds	*oshipeke oshimbyu*
	Ximenia caffra var. *natalensis*	stamped seeds	*oshipeke oshinenepeke*
needles to sew, remove splinters, finish baskets, pierce ears	*Acacia nilotica*	spines	*omutyuula*
prevent bee sting; to drive bees from hive	*Rhus tenuinervis*		*omupombo*

Colophon

The text of this volume is set in 9 and 8 point APS Times Roman; and the display type is 30 point Times Roman Bold Condensed. The book is printed on 70# Centura Gloss, an acid-free paper manufactured to have a shelf-life of more than 100 years, covered with 80# Sirocco Embossed. Halftones were produced using the 300 line Screentone Process®. The binding is an Allen Press proprietary method known as Permanent Binding®. The volume was printed by Allen Press, Inc., Lawrence, Kansas.